Standalone DVR User's Manual

Max 4

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Welcome

Thank you for purchasing our DVR!
This operating manual is designed to be a reference tool for the installation and operation of your system.
Here you can find information about this series DVR, its features and functions, as well as a detailed menu tree.
Before installation and operation, please read the following safeguards and warnings carefully!

Important Safeguards and Warnings

1．Electrical safety

All installation and operation here should conform to local electrical safety codes.
We assume no liability or responsibility for any injuries or damage caused by improper handling or installation.

2．Transportation security

Avoid heavy stress, excess shaking or exposure to water during transportation, storage and installation.

3．Handle with care

Do not apply power to the DVR before completing installation.
Do not place objects on top of the DVR

4．Qualified engineers needed

All examination and repair work should be done by qualified service engineers.
We are not liable for any problems caused by unauthorized modifications or attempted repair.

5．Environment

The DVR should be installed in a cool, dry place away from direct sunlight, flammable materials and water.

6. Accessories

Be sure to use all the accessories recommended by the manufacturer.
Before installation, open the package and check that all the below listed components are included:

- One power cable
- One Ethernet cable
- One remote control (batteries included)
- One USB mouse

Contact your local retailer ASAP if something is missing in your package.

1 FEATURES AND SPECIFICATIONS

1.1 Features

This series DVR has the following features:

- Most competitive price and high cost effectiveness
- H.264 compression algorithm ideal for standalone DVR
- Real-time live display up to 4 cameras, 100/120 fps recording for CIF & 25/30 fps recording for 4CIF
- Pentaplex function: live, recording, playback, backup & remote access
- Multiple control methods: front panel, IR remote control, keyboard, USB mouse and network keyboard.
- Smart video detection: motion detection, camera masking, video loss.
- Smart camera settings: privacy masking, camera lock, color setting, and title display
- Pan Tilt Zoom and Speed Dome Control: more than 60 protocols supported - preset, scan, auto pan, auto tour, pattern, auxiliary functions are supported. And with speed dome, 3D intelligent positioning function supported.
- 4-channel audio inputs and bidirectional talk supported
- Alarm triggering screen tips, buzzer, PTZ preset, e-mail, FTP upload.
- Powerful network software: built-in web server, EPSS. Networking access for remote live viewing, recording, playback, setting, system status, event log, e-mail & ftp function.

1.2 Specifications

System

Main Processor	High performance embedded microprocessor
Operating System	Embedded LINUX
System Resources	Pentaplex function: live, recording, playback, backup & remote access
User Interface	GUI, on-screen menu tips.
Control Device	Front panel, USB mouse, keyboard, IR remote control, network keyboard,.
Input Method	Numeral/Character/Denotation
System Status	HDD status, data stream statistics, log record, BIOS version, on-line user and etc.

Video

Video Input	4-Channel, BNC, 1.0Vp-p, 75Ω		
Video Output	2-channel TV output BNC, 1.0Vp- p, 75Ω; 1 VGA output		
Video Standards	PAL (625Line , 50f/s) , NTSC (525Line , 60f/s)		
Video Compression	H.264		
Video Resolution	Format	NTSC	PAL
	D1(4CIF)	704*480	704 * 576
	CIF	352 *240	352 *288

Video Recording	CIF: PAL 1f/s~25f/s NTSC 1f/s~30f/s D1: PAL 1f/s~6f/s NTSC 1f/s~7f/s
Video Display Split	Full and multiple screen display, 1 / 4
Tour Display	Support
Image Quality	1~6 level (level 6 is the best)
Privacy Masking	8 self-defined four-sided zone for privacy masking for each camera
Camera Lock	Camera locked for users
Color Adjustment	Adjust color according to different time periods
Video Information	Camera title, time, video loss, camera lock, motion detection, recording
TV Output Adjustment	Adjust TV output color & display zone
Audio	
Audio Input	4-channel, BNC, 200-2800mV, 30KΩ
Bidirectional Audio Input	1-channel, BNC, 200-2800mV, 30KΩ
Audio Output	1-channel, BNC, 200-3000mv, 5KΩ
Audio Compression	ADPCM
Video Detection & Alarm	
Motion Detection	Zones: PAL 396 (22*18)/NTSC 330(22*15) detection zones Sensitivity: 1~6 (level 6 is highest) Trigger recording, PTZ preset, tour, alarm
Video Loss	Trigger recording, PTZ preset, tour, alarm
Camera masking	Trigger recording, PTZ preset, tour, alarm
Alarm Input	4-channel, programmable, ground, manual open/closed Trigger recording, PTZ movement, tour, alarm, e-mail & FTP
Relay output	3-channel, 30VDC, 1A, NO/NC, form-C,
Hard Disk	
Hard Disk	1 SATA HDD port, 1 HDD supported.
Space Occupation	Audio ：14.4MB/H Video ：56～400MB/H
HDD Management	Hard disk hibernation technology, HDD faulty alarm
Record, Playback & Backup	
Recording Mode	Manual, continuous, video detection (including motion detection, camera masking, video loss), Alarm
Recording Priority	Manual >Alarm >Video Detection >Continuous.
Recording Interval	1 to 120 minutes (default: 60 minutes)
Overwrite Mode	Supported
Raid Function	Supported
Search Mode	Time/Date, Alarm, Motion Detection & exact search (accurate to second)
Playback	4-channel playback simultaneously, Play, pause, stop, rewind, fast play, slow play, next file, previous file, next camera, previous camera, full screen, repeat, shuffle, backup selection.

Digital Zoom	Selected zone can zoom into full screen during playback
Backup Mode	Flash disk/ USB HDD/ network download
Network	
Interface	RJ-45 Port (10/100M)
Network Functions	TCP/IP
Remote operation	Monitor, PTZ control, playback, system setting, file download, log information
Auxiliary Interface	
USB Interface	Two USB 2.0 ports, one for mouse control, one for backup
RS232	Keyboard, PC communication
RS485	PTZ control
Environmental	
Power Consumption	25W
Working Temperature	0℃~ + 55℃ (14°F ~ 130°F)
Working Humidity	10%~90%
Atmosphere Pressure	86kpa~106kpa
Dimension	1U, 375x285x45mm (W*D*H)
Weight	3.25Kg
Mounting	Desktop or rack

2 Overview and Controls

This section provides information about the front panel and the rear panel. Please refer to this section first after installation.

2.1 Front Panel

Please refer to

Figure 2-1 for front panel information.

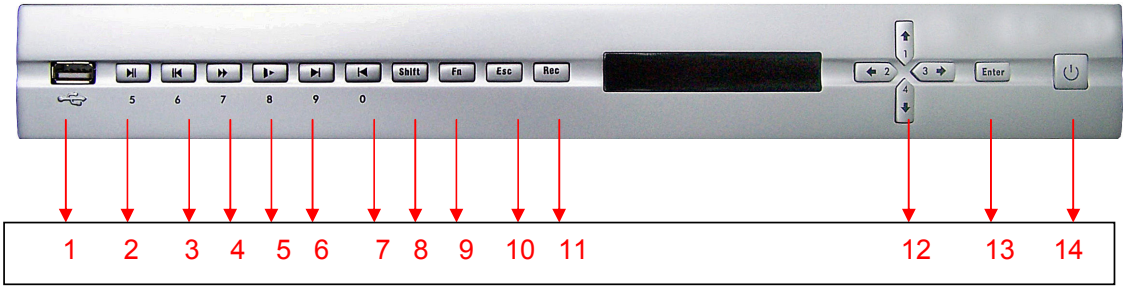


Figure 2-1

SN	Button Name	Icon	Function
1	USB Port		Connect to USB port
2	Play/pause	▶II	In playback mode: play or pause video. In text box: input number 5.
3	Reverse/pause	II◀	In playback mode: reverse play video. In text box: input number 6.
4	Fast play	▶▶	In playback mode: click this button to switch between various fast play speeds and normal playback. In text box: input number 7.
5	Slow play	▶	In playback mode: click this button to switch between various slow play speeds and normal playback. In text box: input number 8.
6	Next	▶I	In playback mode: play the next video. In text box: input number 9.
7	Previous	I◀	In playback mode: play the previous video. In text box: input number 0.
8	Shift	Shift	In input mode, switch between numeral/character and other function keys.
			In four-window preview mode, it can work as Fn button.
9	Assistant	Fn	In 1-ch monitor mode: pop up assistant function：PTZ control and Video color

			In motion detection interface, working with direction keys to finish setup.
			Clear: Press Fn for 1.5 seconds to clear all contents in current text box.
			In preview interface (There is no other menu), click this button for 3 seconds to switch between TV/VGA.
			In text box input mode, press this button to switch between numeral/English character (small/capitalized).
			Special combined operation in some menus.
10	Cancel	Esc	Go back to previous menu or cancel current operation in function menu interface.
			In video playback mode, click this button to go back to real-time monitor mode.
11	Record	Rec	Enable or disable record function manually. In record control menu, use the direction keys to select recording channel.
12	Direction key	v ^	Move cursor
			In text box: increase or decrease numerals.
			In dropdown list, modify current setup.
			In monitor mode, click this button to go to the 1st channel- or 4th channel. (Single-channel monitor mode).
			In text box input mode, press SHIFT and then use up/down key to input number 1 or 4.
		< >	In the main menu or sub-menu interface, click left or right key to move cursor.
			In playback mode: Click left/right key to select correspond option in the function menu.
			In monitor mode, click left/right key to go to 2nd channel or 3rd channel (single-window monitor mode)
			In text box input mode, press SHIFT and then use left/right key to input number 2 or 3.
13	O.K	Enter	Confirm
			Go to the main menu
14	Power		Boot up or shut down the DVR

Note: Some models may be equipped with a jog/shuttle.
Turn shuttle (outer ring) clockwise to navigate right, counter clockwise to navigate left.
Turn jog (Inner dial) clockwise to navigate down, counter clockwise to navigate up.

2.2 Rear Panel

2.2.1 Overview

Please refer to

Figure 2-2 for real panel information.

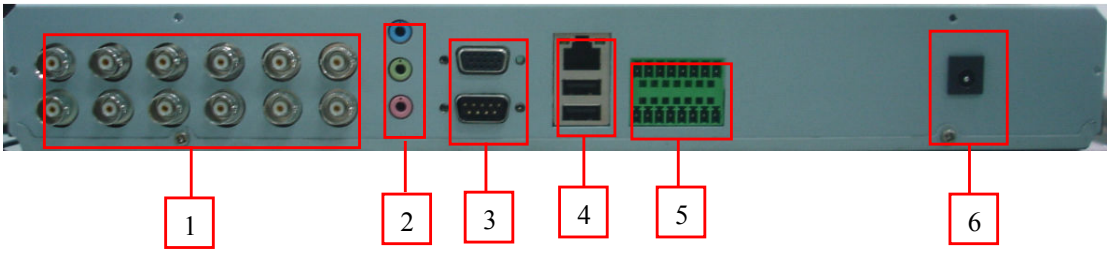


Figure 2-2

1、Audio and video input/output section：Video input/output interface、audio input/output interface；

2、LINE SPK MIC：

- Blue (LINE) is input cable：Level：2Vrms，Input resistance：10k ohms
- Green (SPK) is output cable： Level：2Vrms，Input resistance：10k ohms
- Pink (MIC) is micro phone input cable： Level： 10mV-200mVp-p， Input resistance：600k ohms-20k ohms；

3、RS232 port、VGA port；

4、Mouse/network interface：Two USB 2.0 high-speed ports、10M/100M self-adaptable Ethernet port

5、Main function section：

- C1/O1：Alarm output 1 public port
- C2/O2： Alarm output 2 public port
- +12V： +12V/100mA output
- A～B：RS485 port
- 1～4： Alarm input port
- G： Ground

6、Power control section： Power socket（AC 100V-240V 50HZ/60HZ）；

Please pay attention to the ethernet connection, you need to use crossover cable to connect DVR to PC. You need to use straight-throught to connect DVR via hub or switch.

2.2.2 Connection Sample

Here is a connection sample for your reference. See Figure 2-3.

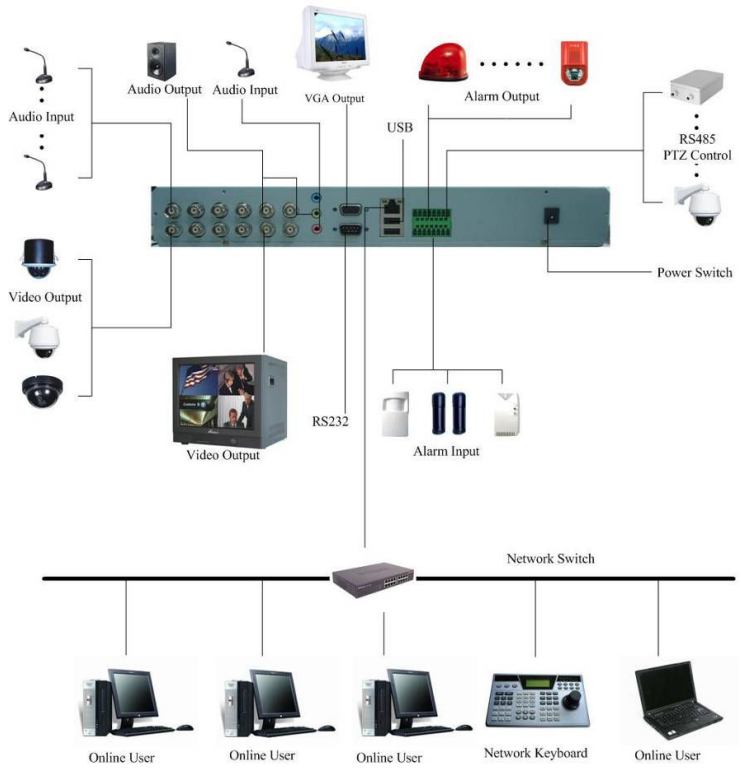


Figure 2-3

2.3 Remote Control

The remote control interface is shown as in Figure 2-4.

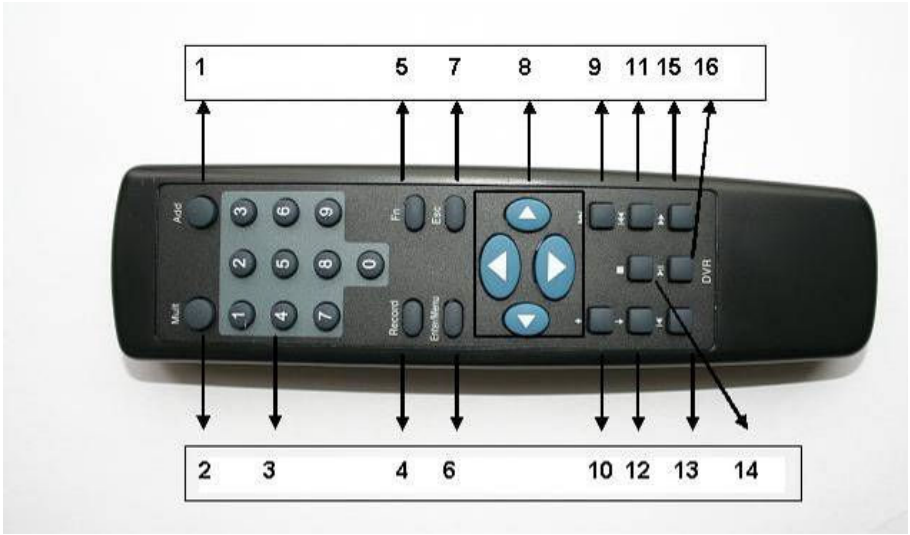


Figure 2-4

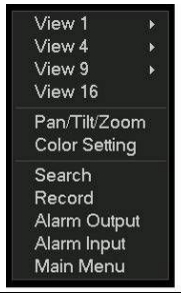
Serial Number	Function
1	remote switch

2	Multiple-window switch
3	0-9 number key
4	Record
5	Function key
6	Confirm /menu key
7	Cancel
8	Direction key
9	forward
10	Previous
11	Back
12	Next
13	Slow play
14	Stop
15	Fast play
16	Play/Pause

2.4 Mouse Control

<table>
<tr><td rowspan="6">Left click mouse</td><td>In real-time monitor mode, you can go to the main menu.</td></tr>
<tr><td>When you have selected a menu item, left click the mouse to view the content within that menu.</td></tr>
<tr><td>Execute the control operation.</td></tr>
<tr><td>Modify checkbox or motion detection status.</td></tr>
<tr><td>Expand drop-down menus</td></tr>
<tr><td>In the input box, you can select different input methods. By left clicking the corresponding button on the panel you can input upper and lower case letters, numbers and symbols. Also note, the _ represents a space, and ← works as a backspace or delete.

To input symbols, you can use the corresponding numeral in the front panel. For example, click number 1 to input “/” , or you can click the number in the on-screen keyboard directly.
 </td></tr>
<tr><td rowspan="2">Double left click mouse</td><td>During playback, double click a file to start the selected playback.</td></tr>
<tr><td>In multiple-window mode, double click one channel to view in full-window. Double left click current video again to go back to previous multiple-window mode.</td></tr>
</table>

Right click mouse	In real-time monitor mode, right click pops up a shortcut menu. From here, you can change window views as well as Pan/Tilt/Zoom controls, and color settings for the currently selected channel. Also, if you are in multiple-window access mode, the system automatically switches to the corresponding channel. 
	Exit current menu without saving any changes. Back out of current menu.
Scroll wheel	In numeral input box: Increase or decrease numeral value.
	Switch the items in the check box.
	Page up or page down
Move mouse	Control the mouse cursor
Click & Drag mouse	Select motion detection zone
	Select privacy mask zone

2.5 Virtual Keyboard & Front Panel

2.5.1 Virtual Keyboard

The system supports Alphanumeric (upper and lower case) and symbols input.
Move the cursor to the text column and you will see the input button pops up on the right. Click that button to switch between numbers and letters. Use > or < to shift between small characters and capitalized characters.

2.5.2 Front Panel

Move the cursor to the text column. Click Fn key and use direction keys to select the desired number. Press enter button to input, once finished.

3 Installation and Connections

Note: All the installation and operation should conform to your local electric safety rules.

3.1 Check Unpacked DVR

Upon receipt of the DVR from the courier, please check whether there is any visible damage to the DVR appearance. The protective materials used for the package of the DVR can protect most accidental clashes during transportation. Then you can open the box to check the accessories.
Please check the items in accordance with the list on the warranty card. Finally you can remove the protective film of the DVR.

3.2 HDD Installation

3.2.1 Choose HDDs

We recommend Seagate/IBM/Hitachi HDD of 7200rpm or higher.

3.2.2 Calculate HDD Size

You can use 120G-1500G HDD to guarantee higher recording durations.
The formula of total HDD size is:
Total Capacity (MB) = Camera Amount * Recording Hours * HDD Usage Per Hour (M/h)
H.264 compression is ideal for standalone DVRs. It can save more than 30% HDD capacity over MPEG4 part 1. When you calculate the total HD capacity, you should estimate the average HDD capacity per hour for each channel.
For example, for a 4-ch DVR, the average capacity of HDD usage per hour per channel is 200M/h. If you want the DVR to record video 12 hours each day for 30 days, the total space needed on your HDDs is: 4 channels * 30 days * 12 hours * 200 M/h = 288G which requires one 320G HDD or 2 160G HDDs.

3.2.3 HDD Installation

Data ribbons and fastening screws are provided in the accessory box.

Please follow the instructions below to install hard disk.

1. Loosen the screws of the upper cover.

2. Remove the HDD bracket from internal unit.

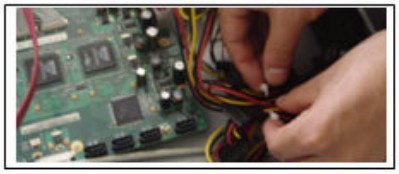
3. Dismantle the upper HDD bracket.

4. Install the HDD. Note the HDD is placed upside down. Make sure bracket is in correct position.

If the HDD amount is less than four, you do not need to install the HDD bracket.

5. Screw the two bracket parts together.

6. Put HDD bracket back and then fix firmly.



7. Loosen the power cable.

8. Connect to the SATA ports and then connect power cord to the HDDs.

9. Place the upper cover back and screw firmly .

After HDD installation, check connection of data ribbon and power cord.

3.3 Desktop Mounting

3.3.1 Desktop Mounting

To prevent surface damage, please make sure that the rubber feet are securely installed on the four corners of the bottom of the unit.
Position the unit to allow for cable and power cord clearance at the rear of the unit.
Please make sure that the air flow around the unit is not obstructed.

3.4 Connecting Power Supply

Please check the input voltage and device power button is match or not.
We recommend you use UPS to guarantee steady operation, DVR life span, and other peripheral equipments operation such as cameras.

3.5 Connecting Video Input and Output Devices

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3.5.1 Connecting Video Input

The DVR automatically detects the video standard (PAL or NTSC) whenever you connect a video input. It accepts both color and black-and-white video.

NOTE:

- Enabling line lock on cameras may cause video distortion. There may be noise in the camera's power source. If video from one or more cameras is distorted, we recommend you disable the line lock on the camera.
- If a video distribution amplifier is installed between the video source and the DVR, do not set the output video level above 1 Vp-p.

To connect each video input:

1. Connect a coaxial cable to the camera or other analog video source.
2. Connect the coaxial cable to the video in connector on the rear panel.

Please refer to **Error! Reference source not found.** for more information.

NOTE:

You need to use a BNC installation tool to connect coaxial cables to the rear panel.

Figure 3-1

3.5.2 Connecting Video Output

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This section provides information about physically connecting video display devices to the DVR. See **Error! Reference source not found.**.

If you connect the DVR with a TV monitor or VGA monitor, the DVR can automatically detect the monitor type. Without any output device, by default, the DVR is configured to use a TV monitor. If your application requires a VGA monitor, you need to hold "FN2" or Shift on the front panel for about 5 seconds, in order to change display modes.

NOTE:

Video output 1 and VGA can't display at the same time. But Video output 2 can display properly with Video Output 1 or VGA.

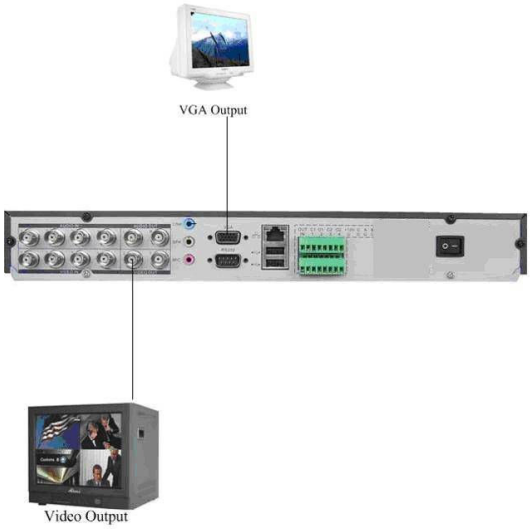

Figure 3-2

3.6 Connecting Audio Input & Output, Bidirectional Audio

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3.6.1 Audio Input/Audio Output

This series DVR has 4-ch audio input, 2-ch audio output.

The DVR encodes audio and video signals simultaneously, which lets you control audio at the monitored location.

To set up audio:

1. Make sure your audio input device matches the RCA input level. If the device and RCA input levels do not match, audio distortion problems may occur.
2. Make sure the audio connector is wired as follows:
3. Connect a line input device or pre-amplified microphone to the audio connector for the video channel on the rear panel.

Please refer to **Error! Reference source not found.**.

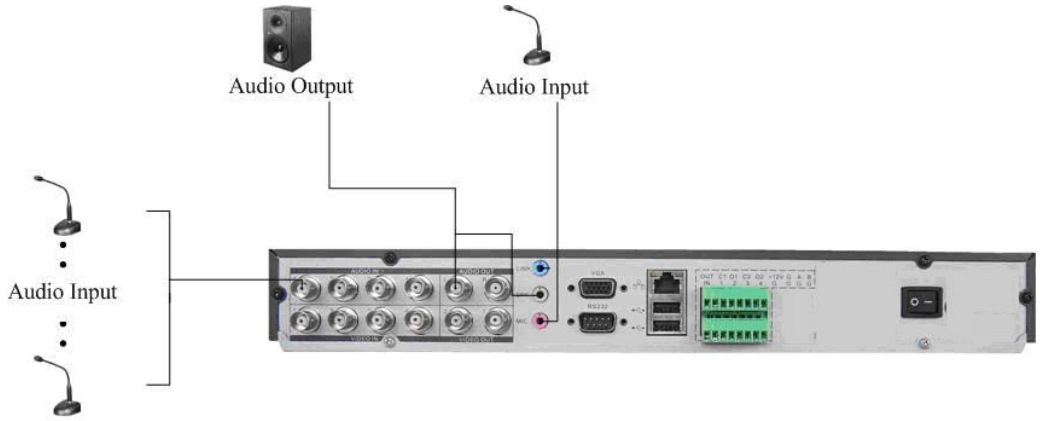

Figure 3-3

3.6.2 Alarm Input and Relay Output

The DVR offers 4 alarm inputs for external signaling devices, such as door contacts or motion detectors. Each alarm input can normally open or normally close. Once configured, an alarm input can invoke many different activities, including triggering a relay device, sending an alert to a security office or store pre-alarm video to the DVR.

3.6.3 Alarm Input

For this series DVR, a grounding signal is needed for alarm input.
If you need to connect two units or one DVR and other device, use a relay to separate them.
Please refer to Figure 3-4 for more information.

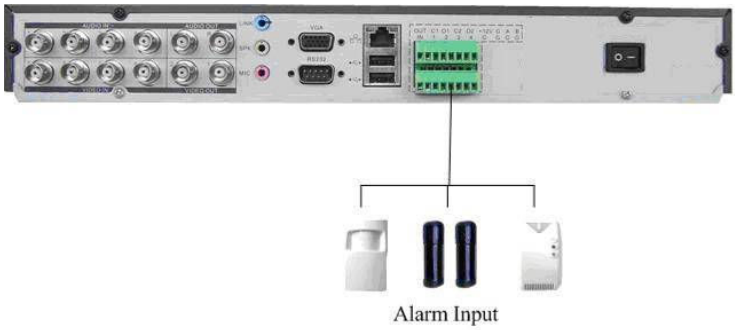

Figure 3-4

3.6.4 Alarm Output

Do not connect alarm output ports directly with high power loads (no more than 1 A). You can use the co-contactor to realize the connection between the alarm output port and the load. Please refer to Figure 3-5 for more information.

Figure 3-5

3.6.5 Alarm Input and Output Details

You can refer to the following sheet and Figure 3-6 for more information.

Parameter	0404 L(N)(Grounding Alarm)
G	Ground line
C1/O1:C2/O2	These are two alarm output ports(Normal Open)

485 A、B	485 communication port. They are used to control devices such as PTZ.
+12（C）	Provide 100mA power to the main board. You need to provide external power if the power is more than 100mA, otherwise it will damage PC power.

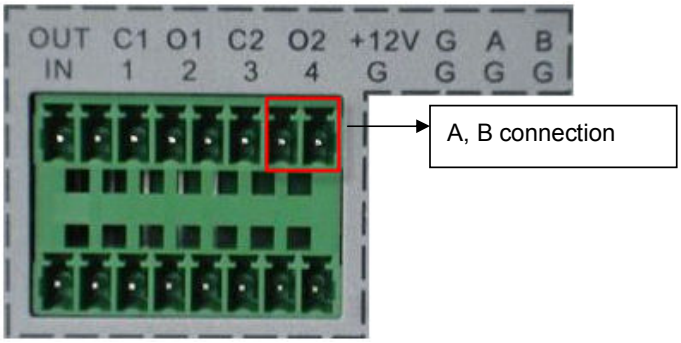

Figure 3-6

Please refer to Figure 3-7 for more information.

- 4-ch grounding alarm inputs. (Normal open or Normal close type)
- Please parallel connect COM end and GND end of the alarm detector (Provide external power to the alarm detector).
- Please parallel connect the Ground of the DVR and the ground of the alarm detector.
- Please connect the NC port of the alarm sensor to the DVR alarm input(ALARM)
- If you need to reset the touched-off alarm remotely, you can use DVR to supply controllable 12 V power to the alarm detector such as the smoke detector.
- Use the same ground with that of DVR if you use external power to the alarm device.

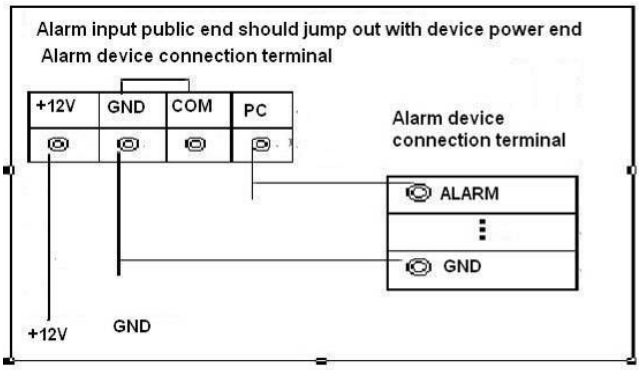

Figure 3-7

3.6.6 Relay Output Description

- 4 ways relay alarm output. Provide external power to external alarm device.

- To avoid over loading, read the following relay parameters sheet carefully. (See below table)
- The controllable +12v can be used to restore the smoke detector.

Please refer to Figure 3-8 for alarm input module information.

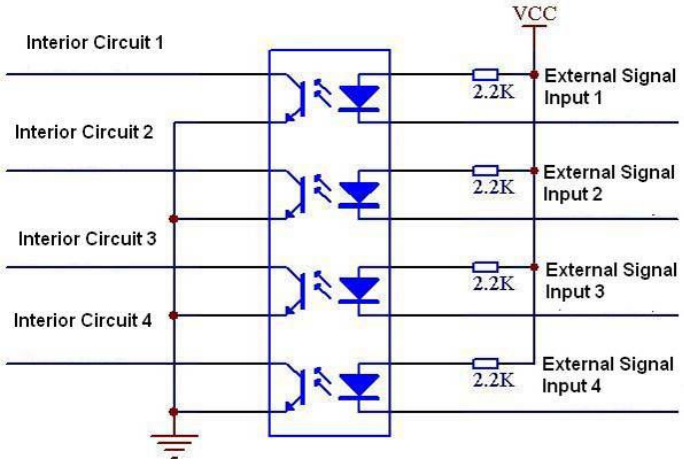

Figure 3-8

Please refer to Figure 3-9 for alarm output module information.

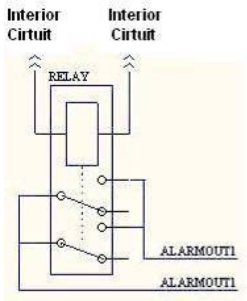

Figure 3-9

Relay Specification

Model:	**JRC-27F**	
Material of the touch	Silver	
Rating （resistance load）	Rated switch capacity	30VDC 2A, 125VAC 1A
	Maximum switch power	125VA 160W
	Maximum switch voltage	250VAC, 220VDC
	Maximum switch currency	1A
Insulation	between touches with same polarity	1000VAC 1minute 50/60Hz
	between touches with different polarity	1000VAC 1minute 50/60Hz

	between touch and winding	1000VAC 1minute 50/60Hz
Surge voltage	between touches with same polarity	1500V (10×160us)
Length of open time	3ms max	
Length of close time	3ms max	
Longevity	Mechanical	50×106 times (3Hz)
	Electrical	200×103 times (0.5Hz)
Temperature	-40°C ~+70°C (-40°F ~ +158°F)	

3.7 RS232

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You can connect the DVR with POS (point of sale systems) or Keyboard through the RS232. With POS systems, the DVR can communicate through RS232 and network. For the POS system, the DVR can integrate the text content and even search the record through the info. The series DVR also support network keyboard operation. You can operate the DVR from the keyboard controls instead of using the control pad on the front panel of the unit.

To connect a NETWORK KEYBOARD to the DVR:

1. Assemble the keyboard according to the instructions in its accompanying installation manual.
2. Connect the keyboard into one of the RS232 ports on the DVR or through network.

3.8 RS485

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When the DVR receives a camera control command, it transmits that command up the UTP cable to the PTZ device. RS485 is a single-direction protocol; the PTZ device can't return any data to the unit. To enable the operation, connect the PTZ device to the RS485(A,B) input on the DVR. Since RS485 is disabled by default for each camera, you must enable the PTZ settings first. This series DVR support multiple protocols such as Pelco-D, Pelco-P.

To connect PTZ devices to the DVR:

1. Connect RS485 A,B on the DVR rear panel. A is RS-485 Positive & B is RS-485 negative
2. Connect the other end of the cable to the proper pins in the connector on the camera.
3. Follow the instructions for configuring a camera to enable each PTZ device on the DVR.

3.9 Other Interfaces

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There are still other interfaces on the DVR, such as USB ports. You can refer to the Figure 3-10 for more information.

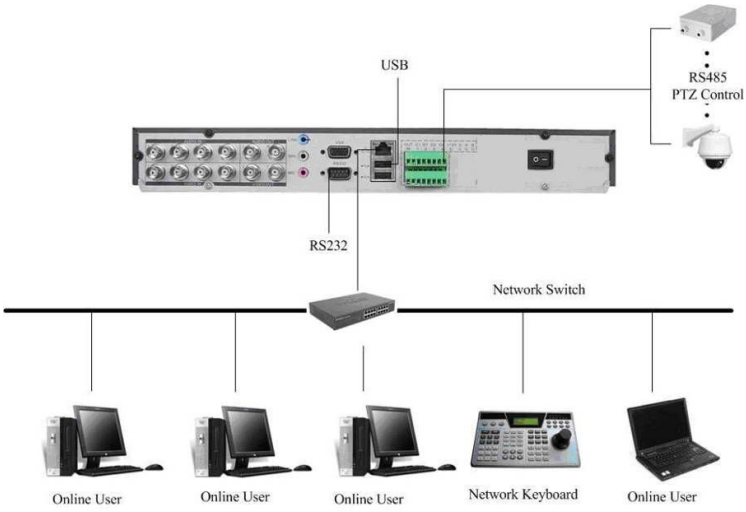

USB
RS485
PTZ Control
RS232
Network Switch
Online User
Online User
Online User
Network Keyboard
Online User

Figure 3-10

4 Overview of Navigation and Controls Login, Logout & Main Menu

Before operation, please make sure you have properly installed HDDs and all the cable connections.

4.1 Login, Logout & Main Menu

4.1.1 Login

When the system boots up, the default video display is a multiple-window view. Click Enter or left click mouse, you can see the login interface. See Figure 4-1.

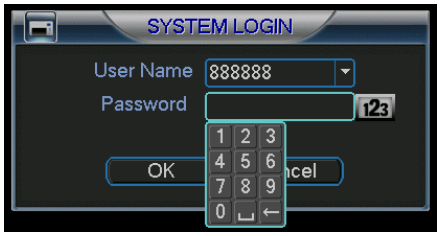


Figure 4-1

There are 4 default accounts.

- Username: **admin** Password: **admin** (administrator, local and remote)
- Username: **guest** Password: **guest** (low authority user, local and remote)
- Username: **user** Passwords: **user** (low authority user who can monitor live feed, playbacks, and backups)
- Username: **default** Password: **default** (hidden user – view cameras only)

For your system security, please modify password after your first login.

You can input your password by using the front panel keys, the remote control or a USB mouse which is recommended. Click 123 to switch between numbers, letters, and symbols.

Note: Three unsuccessful login attempts within 30 minutes will result in system alarm. Five unsuccessful login attempts will result in an account lock.

4.1.2 Main Menu

After you logged in, the main menu is shown as in Figure 4-2.

There are total six icons: search, information, setting, backup, advanced and shutdown.

You can move the cursor to highlight the icon, and then left click mouse to enter the sub-menu.

Figure 4-2

4.1.3 Logout

There are two ways for you to shut down. One is from the menu option:
In the main menu, click shutdown you can see an interface is shown as below. See Figure 4-3.

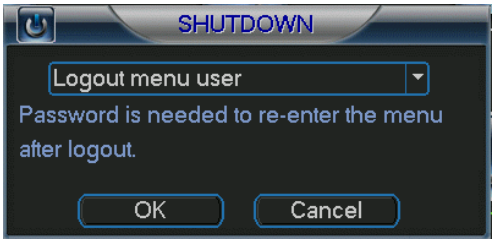


Figure 4-3

There are several options for you. See Figure 4-4.

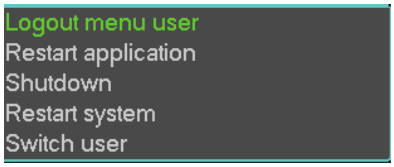


Figure 4-4

The other ways is to press the power button on the front panel for at least 3 seconds - system will stop all operations. Then you can click the power button in the rear panel to turn off the DVR.

4.1.4 Auto Resume after Power Failure

The system can automatically backup video and resume previous working status after power failure.

4.1.5 Replace CMOS Battery

Please make sure to use battery model CR-2032. We recommend you replace it regularly (such as once every 2-3 years) to guarantee system time accuracy.

4.2 Recording Operation

4.2.1 Live Viewing

After you logged in, the system is in a live viewing mode. You will see system date, time and channel name. If you want to change the system date and time, you can refer to general settings (Main Menu->Setting->General). If you want to modify the channel name, please refer to the display settings (Main Menu->Setting->Display)

1		Recording status	3		Video loss
2		Motion detection	4		Camera lock

Note: Please refer to the following sheet for channel status. stands for enabled tour function, stands for a disabled tour.

4.2.2 Manual record

Note:

You need to have proper rights to perform the following operations.

4.2.2.1 Manual record menu

There are two ways to go to the manual record menu.

- Right click mouse or go to the Main Menu -> Advanced->Manual Record.
- In live viewing mode you can press the record button on the front panel. You can also press record on the remote control.

4.2.2.2 Basic operation

There are three statuses: schedule/manual/stop. Highlight icon "○" to select corresponding channel.

- Manual: the highest priority. After manual setup, all selected channels will begin continuous recording.
- Schedule: channel records as you defined in the recording setup (Main Menu->Setting->Schedule)
- Stop: all channels stop recording.

Note: Manual operation has the highest priority.

Figure 4-5

4.2.2.3 Enable/disable record

Check current channel status: "○" means it is not in recording status, "●" means it is in recording status.

Use either the mouse or the directional keys to highlight a channel number.

Figure 4-6

4.2.2.4 Enable all channel recording

Highlight ○ below All, to enable recording on all channels.

- All channel schedule record

Highlight "ALL" after "Schedule". See Figure 4-7.
When the system is in schedule recording, all channels will records as you have previously defined in the schedule. (Main menu->Setting->Schedule).
The corresponding recording LED on the front panel will turn on.

Figure 4-7

- All channel manual record

Highlight "ALL" after "Manual." See Figure 4-8.
When the system is in manual recording, all scheduled recordings previously defined will be ignored. You will see the recording LED light on the front panel turn on, and the system will begin manual recording.

Figure 4-8

4.2.2.5 Stop all channel recording

Highlight "ALL" after "Stop". See Figure 4-9.

The system will stop recording no matter what mode is set in the schedule interface. (Main menu->Setting->Schedule)

Figure 4-9

4.3 Search & Playback

4.3.1 Search Menu

There are two ways for you to go to search menu.

- Click Pause/Play, in the remote control.
- Click search in the main menu.

The search screen is shown below

Figure 4-10.

Usually there are three file types:

- R: regular recording file.
- A: external alarm recording file.
- M: motion detection recording file

There are several playback windows. The DVR support 1/4-ch playback

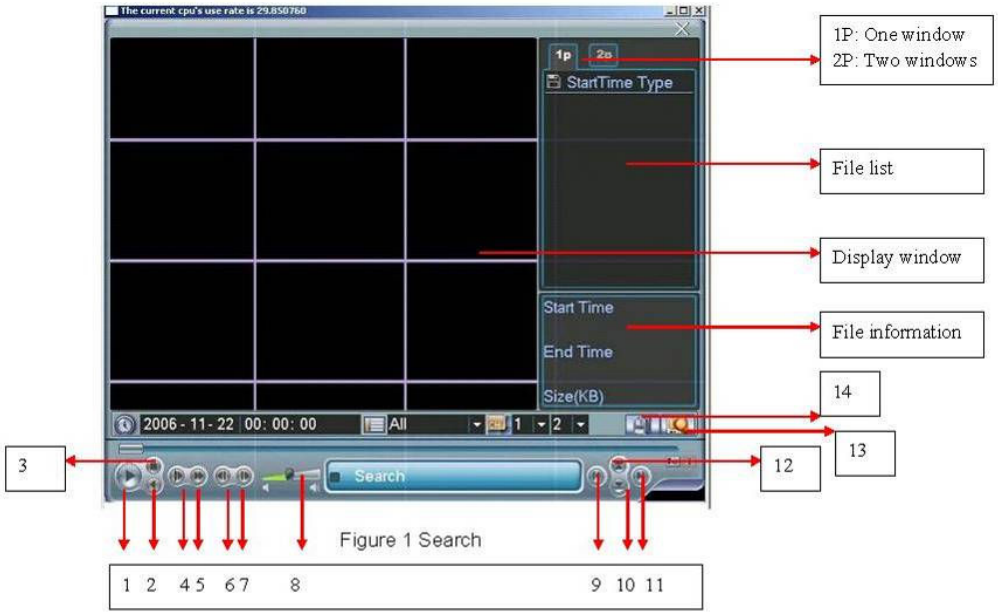


Figure 1 Search

Figure 4-10

Please refer to the following sheet for more information.

Serial Number	Function
1	Play
2	Backward
3	Stop
4	Slow play
5	Fast play
6	Previous frame
7	Next frame
8	Volume
9	Previous file
10	Next channel
11	Next file
12	Previous channel
13	Search
14	Backup

This series DVR supports 4-channel simultaneous playback.

4.3.2 Basic Operation

4.3.2.1 Playback

There are various search parameters: video type, channel number or time. The system can max display 128 files in one screen. You can use page up/down, to view if there are more than one page.

You can double click file name to view the file content.

4.3.2.2 Accurate playback

Input time (h/m/s) in the time column and then click the search button. Your results will appear at the top.

4.3.2.3 Synchronized playback function when playback

During a playback, you can click a number key. The system can switch to the corresponding channel video of the same time.

4.3.2.4 Digital zoom

When the system is in full-screen playback mode you can drag your mouse in the screen to select a section and then left click and drag to digitally zoom in. You can right click to return to your previous view.

4.3.2.5 File backup

You can backup directly from the search menu. You can draw a √ before the file name (multiple choices) and click backup to start the backup process. (Button 14 in

Figure 4-10).

4.3.2.6 Slow playback and fast playback

Refer to the following sheet for slow play and fast playback function.

Button	Illustration	Remarks
Fast play , ⏩	In playback mode, click this , to switch between various fast play modes such as fast play 1,fast play 2 and more.(Fast play 1 means fast play level 1 or not about speed)	Frame rate may vary due to different DVR versions.
Slow play , ► (Or you can turn the outer ring counter clockwise.)	In playback mode, click this , to switch between various slow play modes such as slow play 1 or slow play 2.	
3、Play/Pause⏯	In slow playback mode, click this , to switch between play/pause modes.	
4、Previous/next	In playback mode, you can click ◀ and ▶I to view previous or next video in current channel.	

4.3.2.7 Fast forward/fast backward and frame by frame playback

Special Functions of Shuttle and Jog	Illustration	Remarks
Fast forward(outer ring clockwise)	In playback mode, turn the shuttle (outer ring) clockwise one round to view in fast level 1. Turn it two rounds to get fast level 2. You can continue turning it to get different speeds.	In forward or backward mode, double click Pause/Play, to get normal playback. Frame rate may vary due to different version.
Fast backward(outer ring counter clockwise)	In playback mode, turn the shuttle (outer ring) counter clock-wise one round to play backwards level 1. Turn it two rounds to get backwards level 2. You can continue turning to get different speeds.	
Manual playback frame by frame	In playback mode, click play/pause, slowly turn the jog (inner dial) clock-wise to view frame by frame, counter clock wise to view 1 frame playback.	

4.3.2.8 Backward playback and frame by frame playback

Button	Illustration	Remarks
Backward play ⏸◀ in playback interface.	In normal playback mode, left click backward play, system begins backward playback. Double click backward play; again, system goes to pause mode.	When system is in backward play or frame by frame playback mode, you can click play , to go to normal playback.
Manual playback frame by frame.	Click pause n normal playback mode, slowly turn the jog (inner dial) clock-wise to view frame by frame, counter clock wise to view single frame playback.	

Note:

All the operations here (such as playback speed, channel, time and progress) have relationship with hardware version.

Some series DVRs do not support some functions or playback speeds.

4.3.3 Calendar

Click the calendar icon in

Figure 4-10. This pops up a calendar for your quick reference. Highlighted dates mean that there are recorded clips. You can click a blue date to view file list.
In Figure 4-11, you can see there are video files in May 13th and 14th. Double click the date to view file list.

Figure 4-11

4.4 Record Setup (Schedule)

When the system boots up, it is in default 24-hour regular mode. You can set record type and time in the schedule.

4.4.1 Schedule Menu

In the main menu, from setting to schedule, you can see schedule interface. See Figure 4-12.
There are three recording types: R-Regular, MD-Motion detection, A- Alarm.

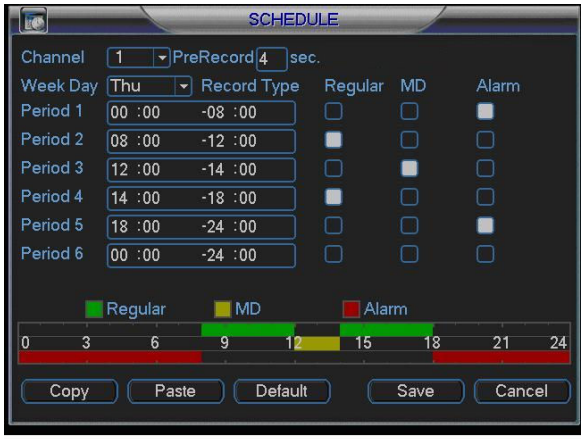

SCHEDULE
Channel 1 PreRecord 4 sec.
Week Day Thu Record Type Regular MD Alarm
Period 1 00 :00 -08 :00
Period 2 08 :00 -12 :00
Period 3 12 :00 -14 :00
Period 4 14 :00 -18 :00
Period 5 18 :00 -24 :00
Period 6 00 :00 -24 :00
Regular MD Alarm
0 3 6 9 12 15 18 21 24
Copy Paste Default Save Cancel

Figure 4-12

4.4.2 Basic Operation

There are a total six periods. See Figure 4-12.

- Channel: Select the channel number first. You can select “all” if you want to set recording for all of your channels.
- Week day: There are eight options: ranges from Saturday to Sunday and all.
- Record types: There are three types: regular, motion detection (MD) and Alarm.

Please highlight icon to select the corresponding function.

At the bottom of the menu, there are color bars for your reference. Green stands for regular recording, yellow stands for motion detection and red stands for alarm recording.
After completing all the setups please click save button.
4.4.1.1 Quick Setup
This function allows you to copy one channel setup to another. After setting in channel 1, you can click copy, and turn to channel 2 and then click paste.
You can finish setting for one channel and then click save, or you can finish all setup and then click save to memorize all the settings.

4.5 Detect

4.5.1 Detect Menu

In the main menu, from Setting to Detect, you can see motion detect interface. See Figure 4-13. There are three detection types: motion detection, video loss, camera masking.

4.5.2 Motion Detect

- Channel: select the channel you want to configure for motion detection.
- Event type: from the dropdown list you can select the detection type.
- Record Channel: select the channel to activate recording function once the detection occurs. Make sure you have set MD record in the schedule menu (Main Menu->Setting->Schedule
- Latch: when detection is complete, the auto trigger continues detecting for a specified time. The value ranges from 10-300 seconds
- Region: Select region from Figure 4-14 and you can specify a motion detection zone. There are 396(PAL)/330(NTSC) small zones.
- Sensitivity: Ranges from 1-6. 1 is the lowest and 6 is the highest level of sensitivity.
- Show message: You can choose to pop up a message to alarm you in the local screen.
- PTZ activation: Here you can set PTZ movement when detection occurs. Such as go to preset, tour &pattern when there is an alarm. Click "select" - you will see an interface is shown as in Figure 4-15.
- Period: Click set button, you will see an interface is shown as in Figure 4-16. Here you can assign business days or non-business days. In Figure 4-16, click set to see the interface shown in Figure 4-17.
- Anti-dither: Here you can set anti-dither time.
- Alarm output: when alarm occurs, the DVR enables peripheral alarm devices.
- Tour: Here you can enable the tour function when alarm occurs. It is a one-window tour.

Highlight icon to select the corresponding function. After configurations are made, choose "save" to save and the system will go back to the previous menu.
Note: In motion detection mode, you can not use the copy/paste feature to set channel setup. The recorded video option of each channel may not be the same.

In Figure 4-14, you can left click mouse and drag it to set a region for motion detection. Click Fn to switch between active/passive motion detection. The red grid squares are your active motion zones – everything else is a passive zone. After competing setup, please press enter to exit or right click to return to the previous menu

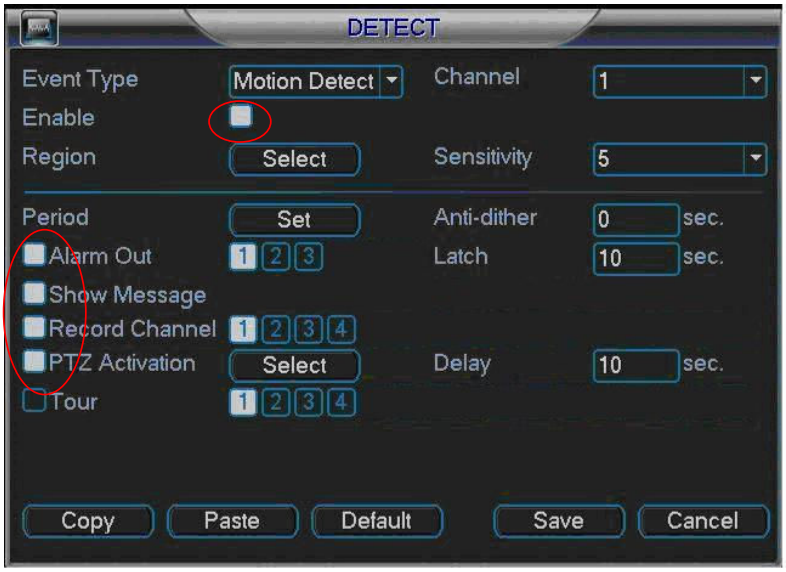


Figure 4-13

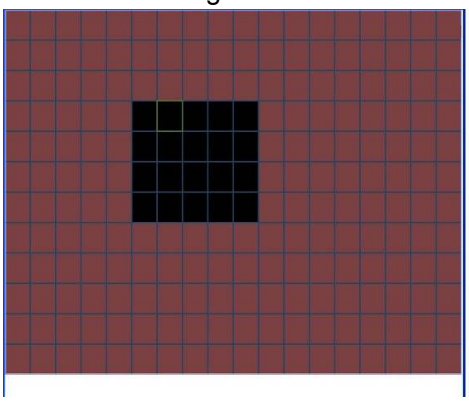


Figure 4-14

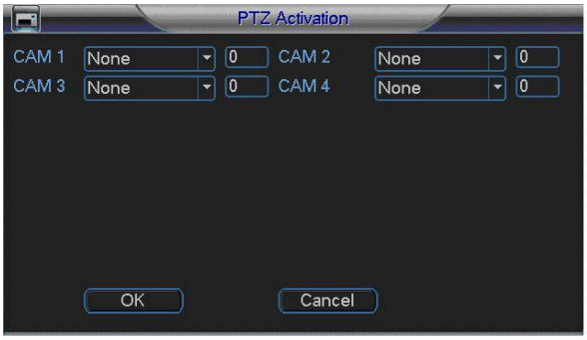


Figure 4-15

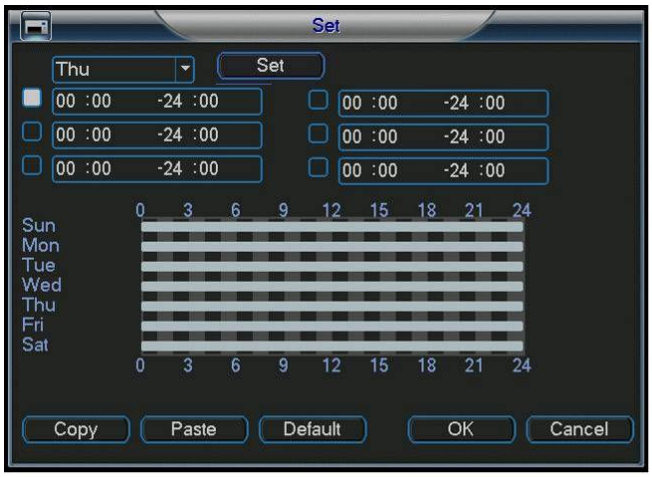


Figure 4-16

Figure 4-17

4.5.3 Video Loss

In Figure 4-13, select video loss from the type list. You can see an interface is shown as in Figure 4-18. This function allows you to be informed when video loss occurs. You can enable alarm output channel and then enable show message function also.

- Channel: select the channel you want to configure for motion detection.
- Event type: from the dropdown list you can select the detection type.

- Record Channel: select the channel to activate recording function once the detection occurs. Make sure you have set MD record in the schedule menu (Main Menu->Setting->Schedule
- Latch: when detection is complete, the auto trigger continues detecting for a specified time. The value ranges from 10-300 seconds
- Show message: You can choose to pop up a message to alarm you in the local screen.
- PTZ activation: Here you can set PTZ movement when detection occurs. Such as go to preset, tour &pattern when there is an alarm. Click "select" you can see an interface is shown as in Figure 4-15.
- Period: Click set button, you can see an interface is shown as in Figure 4-16. Here you can assign business days or non-business days. In Figure 4-16, click set to see the interface shown in Figure 4-17.
- Anti-dither: Here you can set anti-dither time.
- Alarm output: when alarm occurs, the DVR enables peripheral alarm devices.
- Tour: Here you can enable the tour function when alarm occurs. It is a one-window tour. Please go to chapter 5.3.9 Display for tour interval setup.

Figure 4-18

4.5.4 Camera Masking

When someone viciously masks the lens, the system can alert you to guarantee video continuity or to trigger external peripherals. The camera masking interface is shown as in Figure 4-19.

- Channel: select the channel you want to configure for motion detection.
- Event type: from the dropdown list you can select the detection type.
- Record Channel: select the channel to activate recording function once the detection occurs. Make sure you have set MD record in the schedule menu (Main Menu->Setting->Schedule

- Latch: when detection is complete, the auto trigger continues detecting for a specified time. The value ranges from 10-300 seconds
- Show message: You can choose to pop up a message to alarm you in the local screen.
- PTZ activation: Here you can set PTZ movement when detection occurs. Such as go to preset, tour &pattern when there is an alarm. Click “select” you can see an interface is shown as in Figure 4-15.
- Period: Click set button, you can see an interface is shown as in Figure 4-16. Here you can assign business days or non-business days. In Figure 4-16, click set to see the interface shown in Figure 4-17.
- Anti-dither: Here you can set anti-dither time.
- Alarm output: when alarm occurs, the DVR enables peripheral alarm devices.
- Tour: Here you can enable the tour function when alarm occurs. It is a one-window tour. Please go to chapter 5.3.9 Display for tour interval setup.

Note:
In this interface the copy/paste function is only valid for the same event type. For example, you can not copy a channel setup in video loss mode to camera masking mode.

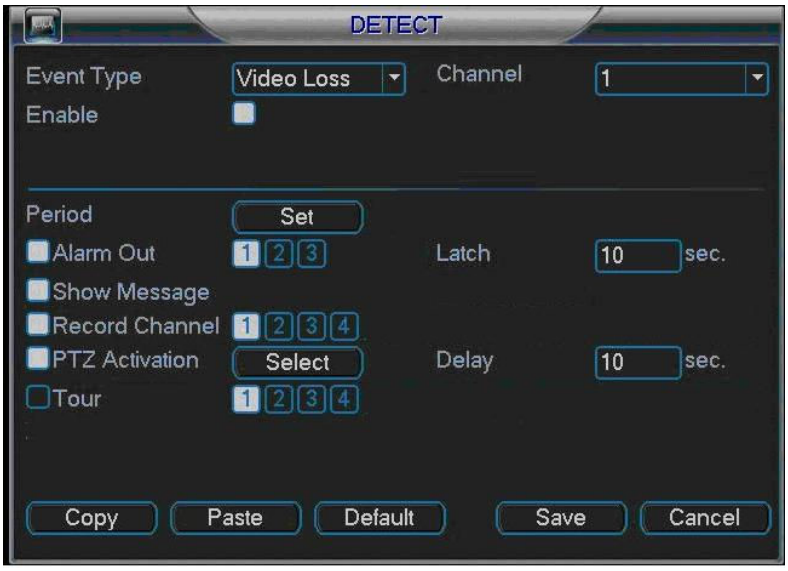


Figure 4-19

4.6 Alarm Setup and Alarm Activation

All alarm devices should be properly connected prior to configuring alarm settings.

4.6.1 Alarm Menu

From the main menu, navigate from Setting then to Alarm. You can see an interface is shown as in Figure 4-20.

4.6.2 Alarm setup

Alarm interface is shown as below. See Figure 4-20.

- Alarm in: Select channel number.
- Event type: There are two types: local input/network input.
- Type: Normal open or normal close.
- PTZ activation: Setup PTZ movement when alarm occurs, such as go to a preset, tour or pattern when there is an alarm. Click “select” button, you can see an interface is shown as in Figure 4-21.
- Period: Click set button, you can see an interface is shown as in Figure 4-22. Here you can set business days and non-business days. In Figure 4-22, click set button, you can see an interface is shown as in Figure 4-23. Here you can set your own setup for business day and non-business day.
- Anti-dither: Here you can set anti-dither time.
- Show message: System can provide pop up notifications in the local host screen if this function is enabled.
- Record channel: you can select proper channel to record alarm video (Multiple choices). At the same time you need to set alarm record in schedule interface (Main Menu->Setting->Schedule) and select schedule record in manual record interface (Main Menu->Advance->Manual Record).
- Latch: This is where you can set proper delay duration. Value ranges from 10 to 300 seconds. System automatically delays specified seconds in turning off alarm and activated output after external alarm cancelled.
- Tour: Here you can enable tour function when alarm occurs. It is a one-window tour: Please go to chapter 5.3.9 Display for tour interval setup.

Please highlight icon to select the corresponding option. After completing all the setups please click save button, system goes back to the previous menu.

Figure 4-20

Figure 4-21

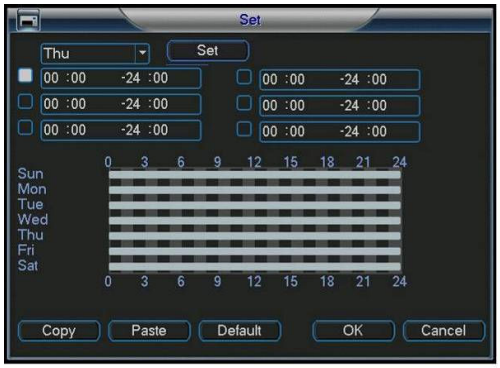


Figure 4-22

Figure 4-23

4.7 Backup

The DVR supports various backup devices such as CD-RW, DVD drives, USB backup and network downloads. Here we will introduce a USB backup first. You can refer to Chapter 7: Web Client Operation for network downloads & backup operations.

4.7.1 Detect Device

Click backup button, you can see an interface is shown as in Figure 4-24. Here is for you to view devices information.

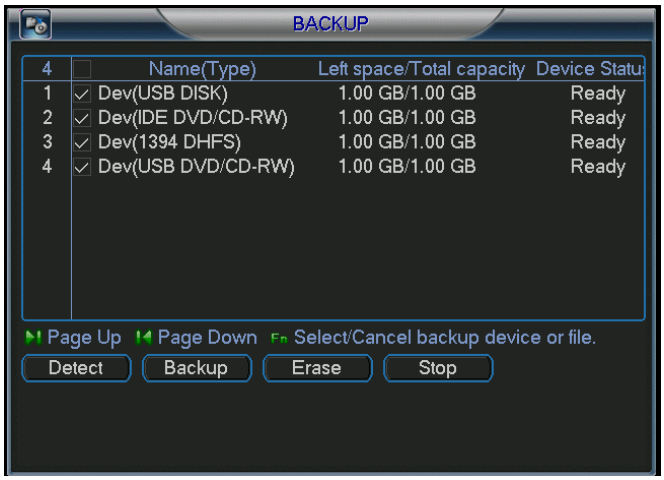


Figure 4-24

4.7.1 Backup

Select your desired backup device first, and then specify your channel & time parameters. Click 'add' to start the search. All files matching the search criteria will populate the list below. The system will automatically calculate the required and remaining space allotted from the selected device. See Figure 4-25.

The system will only backup files marked with a √ before the channel name. You can use Fn or cancel to delete √'s after the file serial number.

Click backup when you're ready to back files to the selected device. There is a process bar for you reference.

After the backup completed, you can see a dialogue box prompting successful backup.

.

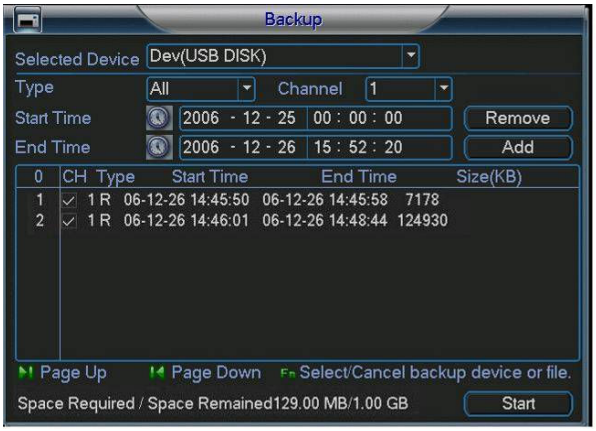


Figure 4-25

Click start, and the system will begin burning. At the same time, the start button becomes stop button. You can view the remaining time and process bar at the bottom left.

See Figure 4-26.

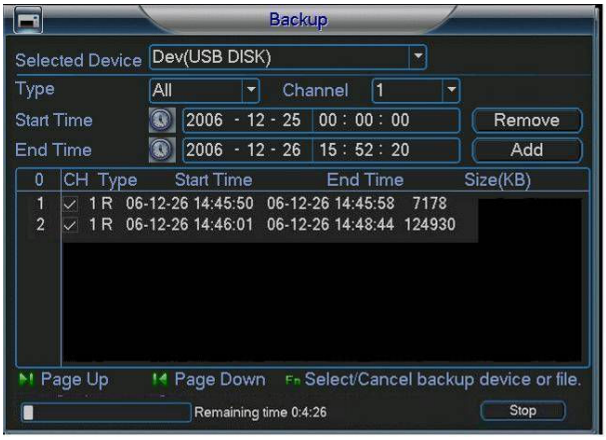


Figure 4-26

Tips:
During the backup process, you can click ESC to exit the current menu; however, the system will not terminate the backup process.

Note:
When you click stop button during the burning process, there are two conditions for different devices:

- For a CD/DVD burner, the stop function becomes activated immediately and there will be no data burned.
- For a USB device, you will have as much data as processed within the burning time.

The file name format usually is: SN_CH+channel number+time Y+M+D+H+M+S. In the file name, the YDM format is the same as you set in general interface. (Main Menu ->Setting ->General).You can visit our website to view listed CD-ROM type.

4.8 PTZ Control and Color Setup

Note: All the operations here are based on PELCO D1 protocol.

4.8.1 Cable Connection

Please follow the procedures below to go on cable connection

- Connect the dome's RS485 cable to the DVR's RS485 port. A is (+)positive. B is (-) negative
- Connect the dome's video output cable to the DVR's video input port.
- Connect power adapter to the dome.

4.8.2 PTZ Setup

Note: The camera video should be in the current screen. Before setup, please check the following connections are correct:

- PTZ and decoder connection is in place. Decoder address setup is right.
- Decoder A (B) line connects with DVR A (B) line.

Boot up the DVR, input user name and password.
In the main menu, click setting, and then click Pan/Tilt Control,. The interface is shown as in Figure 4-27. Here you can set the following items:

- Channel: select the current camera channel.
- Protocol: select corresponding PTZ protocol(such as PELCOD)
- Address: default address is 1.
- Baud rate: select corresponding baud rate. Default value is 9600.
- Data bits: select corresponding data bits. Default value is 8.
- Stop bits: select corresponding stop bits. Default value is 1.
- Parity: there are three options: odd/even/none. Default setup is none.

Figure 4-27

After completing all the setups please click save button.
In single window display mode, right click mouse (or “Fn” on the front panel or press “Fn” on the remote control) to highlight pan/tilt/zoom sub menu. See Figure 4-28.

Figure 4-28

Click Pan/Tilt/Zoom, the interface is shown as below. See Figure 4-29.

- Speed: value ranges fro 1 to 8.
- Zoom
- Focus
- Iris

Click icon and to adjust zoom, focus and iris.

Figure 4-29

In Figure 4-29, click directional arrows (See Figure 4-30) to adjust PTZ position. There are total 8 directional arrows.

Figure 4-30

4.8.3 3D Intelligent Positioning Key

In the middle of the eight directional arrows, there is a 3D intelligent positioning key. See Figure 4-31.

Click this key and the system will go back to the single screen mode. Drag the mouse in the screen to adjust section size. It can realize PTZ automatically.

Figure 4-31

Here is a sheet for you reference.

Name	Function key	function	Shortcut key	Function key	function	Shortcut Key
Zoom		Near	▶		Far	▶▶
Focus		Near	◀		Far	▶
Iris		close	⏸◀		Open	▶⏸

4.9 Preset/ Patrol/Pattern/Scan

In Figure 4-29, click the “set” button. The interface is shown as below. See Figure 4-32.

Here you can set the following items:

- Preset
- Tour (Patrol)
- Pattern
- Border

Figure 4-32

In Figure 4-29, click page switch button, the interface is shown as in Figure 4-33. Here you can activate the following functions:

- Preset
- Tour (Patrol)
- Pattern
- Auto scan
- Auto pan
- Flip
- Reset
- Page switch

Figure 4-33

Note: The following setups are usually operated in the Figure 4-29,Figure 4-32 and Figure 4-33 .

4.9.1Preset Setup

In Figure 4-29, use the eight directional arrows to adjust camera to the proper position.

In Figure 4-32, click preset button and then input the desired preset number. The interface is shown as in Figure 4-34.

Now you can add this preset to one tour.

Figure 4-34

4.9.2 Activate Preset

In Figure 4-33, input the desired preset number in the No. field and click preset to activate it.

4.9.3 Patrol setup (Tour Setup)

In Figure 4-32, click patrol. The interface is shown as in Figure 4-35. Input preset number and add this preset to a patrol (tour). For each patrol (tour), you can input max 80 presets.

Figure 4-35

4.9.4 Activate Patrol (tour)

In Figure 4-32, input patrol (tour) number in the No. blank and click patrol,

4.9.5 Pattern Setup

In Figure 4-32, click pattern, and then click “begin” to start the pattern’s recording. The interface is shown as in Figure 4-36. Then you can go to Figure 4-29 to modify zoom, focus, and iris.
Go back to Figure 4-36 and click “end” button.
Now you can memorize all these operations as pattern 1.
System supports max 255 patterns.

Figure 4-36

4.9.6 Activate Pattern Function

In Figure 4-33, input the desired pattern preset value in the No. field and click pattern to activate it.

4.9.7 Auto Scan Setup

In Figure 4-32, click border button. You will see an interface is shown as in Figure 4-27.

Go to Figure 4-29. Use the directional arrows to select the camera's left limit.

Next, go to Figure 4-37 and click left limit.

Repeat the above procedures to set the right limit.

Figure 4-37

4.9.8 Activate Auto Scan

In Figure 4-33 click Auto Scan to begin the auto scan.

Correspondingly, the auto scan button becomes to stop button. Click stop button to terminate scan operation.

4.10 Flip

In Figure 4-33, click page switch button, you can see an interface is shown as below. See

Figure 4-38. Here you can set auxiliary functions.

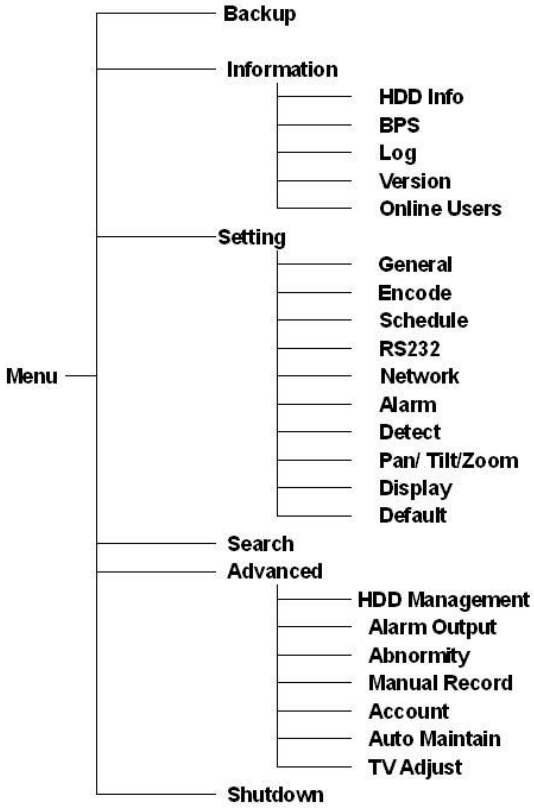
Clicking page switch again, system goes back to Figure 4-29.

PAN/TILT/ZOOM
Direct Aux Oper
Light
On
Off
Aux Num Oper
1
On
Off
Page Switch
Figure 4-38

5 Understanding the Menu: Operation and Control

5.1 Menu Tree

This series DVR menu tree is shown as below.



5.2 Main Menu

After you are logged in, the system main menu is shown as below. See Figure 5-1 .
There are a total six icons: Search, Information, Setting, Backup, Advanced and Shutdown.
Move the cursor to highlight the icon and then left click mouse to enter its sub-menu.

Figure 5-1

5.3 Setting

In the main menu, highlight the setting icon and left click to select.
The system setting menu is shown as below. See Figure 5-2.

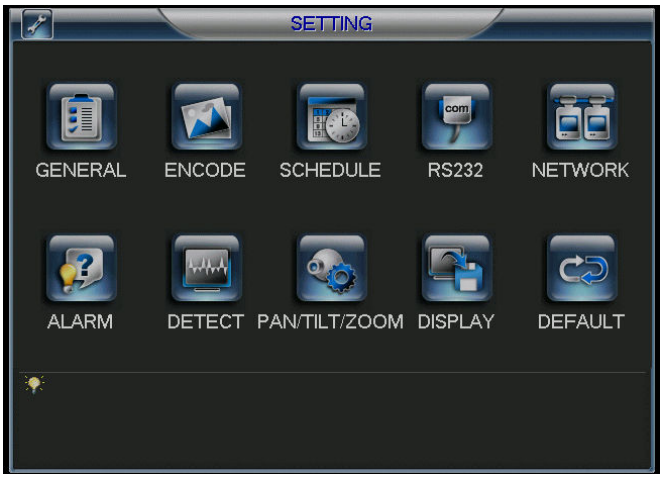


Figure 5-2

5.3.1 General

General setup includes the following items. See Figure 5-3.

- System time: Set the date and time of the unit.
- Date format: there are three types: YYYY-MM-DD: MM-DD-YYYY or DD-MM-YYYY.
- Date separator: there are three denotations to separate date: dot, line and slash.
- DST: Here you can set DST time and date. Enable the DST function and then click set button. You can see an interface is shown as in Figure 5-4. Here you can set the start time and end time by setting the corresponding week setup. In Figure 5-4, click date button, you can see an interface is shown as in Figure 5-5. Here you can set the start time and end time by setting the corresponding date setup.

- Time format: there are two types: 24-hour mode or 12-hour mode.
- Language: system supports various languages: Chinese (simplified), Chinese (Traditional), English, Italian, Japanese, French, Spanish (All languages listed here are optional. Slight difference maybe found in various series.)
- HDD full: Here is for you to select working mode when hard disk is full. There are two options: stop recording or rewrite.
- Pack duration: Here is where you specify the duration of recorded files. Default value is 60 minutes.
- DVR No: When you are using one remote control to control several DVRs, you can give a number to each DVR for your management.
- Video standard: There are two formats: NTSC and PAL.
- Auto logout: Here is for you to set auto logout interval once login user remains inactive for a specified time. Value ranges from 0 to 60 minutes.

Note:

Since system time is very important, do not modify time unless there is a must!

After completing all the setups please click save button, system goes back to the previous menu.

Figure 5-3

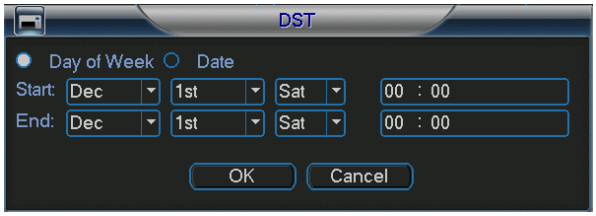


Figure 5-4

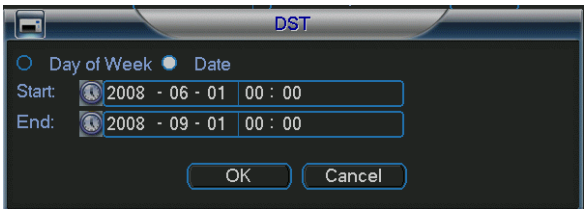


Figure 5-5

5.3.2 Encode

The encode menu includes the following items. See Figure 5-6.

Note: Some series do not support certain features.

- Channel: Select the channel you want.
- Compression: The system supports H.264. Or you can select from the dropdown list.
- Resolution: The system supports various resolutions, you can select from the dropdown list. For this model, we can support D1/CIF.
- Bit rate: The system supports two types: CBR and VBR. In VBR mode, you can set video quality.
- Quality: There are six levels ranging from 1 to 6. The sixth level has the highest image quality.
- Frame rate: 1-30 frames per second: 1 f/s,2f/s,3f/s, 6f/s,12f/s,25f/s. (Some series DVRs only support PAL 25f/s)
- Video/audio: you can enable or disable the video/audio.
- Overlay: click overlay, you can see an interface is shown as in Figure 5-7.
  - ✧ Cover area (Privacy mask): Here is for you to set window masking regions. You can drag the mouse to set the proper section size.
  - ✧ Preview/monitor: privacy mask has two types. Preview means the privacy mask zone can not be viewed by user when system is in preview status. Monitor means the privacy mask zone can not be view by the user when system is in monitor status.
  - ✧ Time display: You can select whether the system displays time or not when you playback.
  - ✧ Channel display: You can select whether the system displays channel number or not when you playback.

System default setup is:

- Channel:1
- Compression:H.264
- Resolution: CIF
- Bit rate: CBR
- Quality: 6
- Frame rate: 30f/s

Please highlight icon to select the corresponding function.

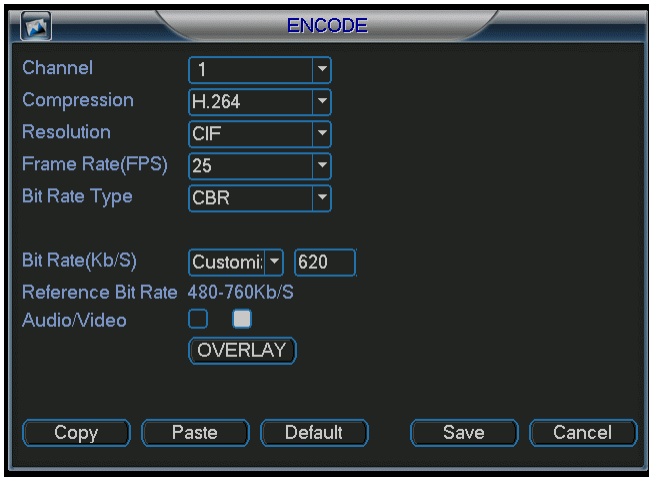


Figure 5-6

Figure 5-7

5.3.3 Schedule

Please refer to chapter 4.4 schedule.

5.3.4 RS232

The RS232 interface is shown as below. See Figure 5-8

- Function: There are various devices for you to select. The console setting is used to upgrade the device via a serial connection. The keyboard is for you to use a special keyboard to control the device.
- Baud rate: You can select proper baud rate.
- Data bit: You can select proper data bit.
- Stop bit: There are three values: 1/1.5/2.
- Parity: there are three choices: none/odd/even.

After completing setup, click save button. The system will return to the previous menu.

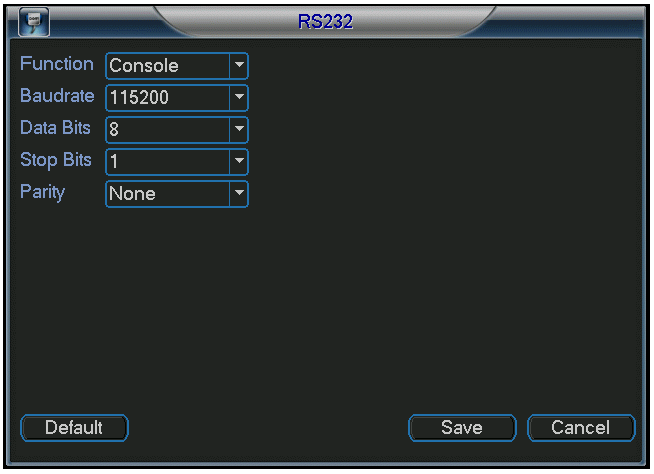


Figure 5-8

5.3.5 Network

Here is for you to input network information. See Figure 5-9.

- IP address: Here you can specify an IP address.
- DHCP: Dynamic Host Configuration – The DVR will lease the IP info from any DHCP server on the network. When the DHCP function is enabled you can not modify the IP/Subnet mask /Gateway. If you have not enabled DHCP function you can modify IP/Subnet mask/Gateway. You would need to disable DHCP function to view current IP information. Besides, when PPPoE is operating, you can not modify IP/Subnet mask /Gateway.
- TCP port: Default value is 37777. (System server port 37778 is reserved for network UDP use)
- UDP port: Default value is 37778.
- HTTP port: Default value is 80.
- Max connection: The system supports a maximum of 10 users. 0 means there is no connection limit.
- Transfer mode: Here you can select the priority between fluency/video qualities.
- Network download: System can process the downloaded data first if you enable this function.

After completing setup, click save. The system will return to the previous menu.

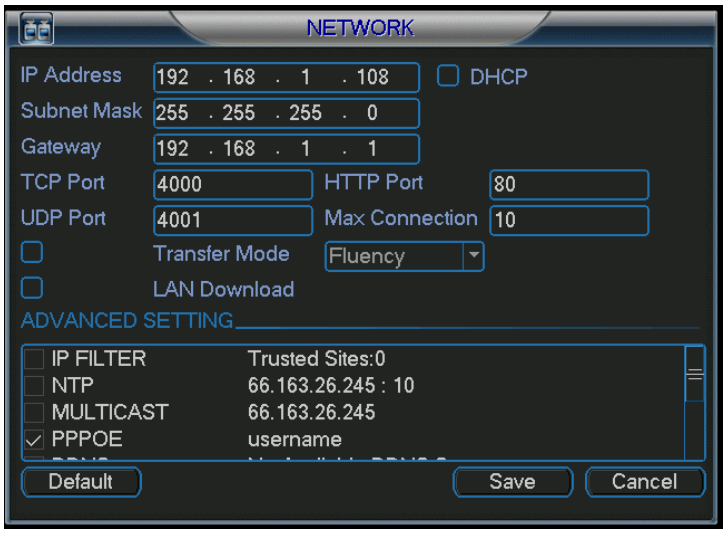


Figure 5-9

5.3.5.1 Advanced Setup

The advanced setup interface is shown as in Figure 5-10. Place a check next to items in order to enable the corresponding function; then double click the item to go to setup interface.

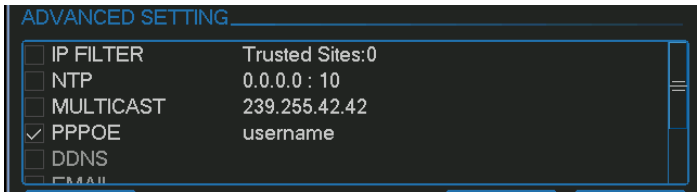


Figure 5-10

5.3.5.2 IP Filter

The IP Filter interface is shown as in Figure 5-11. You can specify individual IP addresses to have access to the DVR. System supports a maximum of 64 IP addresses.

Please note after you enabled this function, only the IP listed below can access current DVR.

If you disable this function, all IP addresses can access current DVR.

Figure 5-11

5.3.5.3 Multiple Cast Setup

Multiple-cast setup interface is shown as in Figure 5-12.

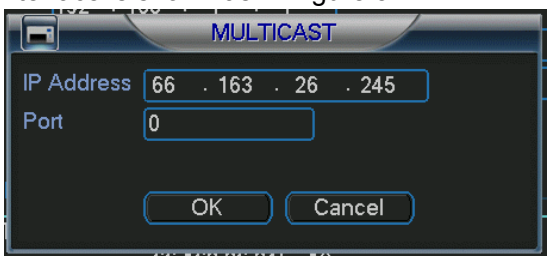


Figure 5-12

Here you can set a multiple cast group. Please refer to the following sheet for detailed information.

- IP multiple cast group address

-224.0.0.0-239.255.255.255

  - The higher four-bit of the first byte=”1110”

- Reserved local multiple cast group address

-224.0.0.0-224.0.0.255

-TTL=1 When sending out telegraph

-For example

224.0.0.1 All systems in the sub-net

224.0.0.2 All routers in the sub-net

224.0.0.4 DVMRP router

224.0.0.5 OSPF router

224.0.0.13 PIMv2 router

- Administrative scoped addressees

-239.0.0.0-239.255.255.255

-Private address space

  - Like the single broadcast address of RFC1918
  - Can not be used in Internet transmission
  - Used for multiple cast broadcast in limited space.

Except the above mentioned addresses of special meaning, you can use other addresses. For example:
Multiple cast IP: 235.8.8.36
Multiple cast PORT: 3666.

5.3.5.4 PPPoE

The PPPoE interface is shown as in Figure 5-13.
Input “PPPoE name” and “PPPoE password” you get from your ISP (Internet service provider). Click save then restart the DVR to activate your configuration.
After rebooting, the DVR will connect to the internet automatically. The IP in the PPPoE is the DVR’s dynamic value. You can then use this IP to access the unit.

Figure 5-13

5.3.5.5 NTP Setup

You will need to install an SNTP server (Such as Absolute Time Server) in your PC first, or, at least have one running on your network.
NTP setup interface is shown as in Figure 5-14.

- Host IP: Input your PC address.
- Port: This series DVR supports TCP transmission only. Port default value is 123.
- Update interval: minimum value is 15(Unit: minute)
- Time zone: select your corresponding time zone here.

Here is a sheet for your time zone setup.

City /Region Name	Time Zone
London	GMT+0
Berlin	GMT+1
Cairo	GMT+2
Moscow	GMT+3
New Deli	GMT+5
Bangkok	GMT+7
Beijing (Hong Kong)	GMT+8
Tokyo	GMT+9
Sydney	GMT+10
Hawaii	GMT-10
Alaska	GMT-9
Pacific Time(P.T)	GMT-8
American Mountain Time(M.T)	GMT-7
American Central Time(C.T)	GMT-6
American Eastern Time(E.T)	GMT-5
Atlantic Time	GMT-4
Brazil	GMT-3

Middle Atlantic Time	GMT-2

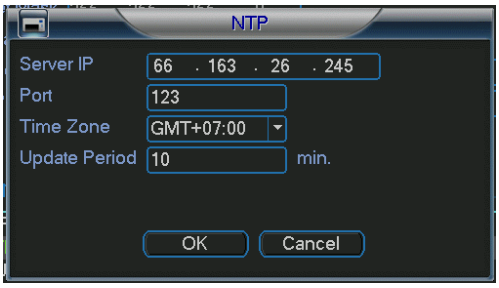


Figure 5-14

5.3.5.6 DDNS Setup

The DDNS setup menu is shown as below. See Figure 5-15.

You need a PC with a static IP address in the network. You also need the DDNS software running on this PC. In other words, this PC is a DNS (domain name server).

In the network DDNS menu, input your PPPoE name you get from you ISP and server IP (PC with DDNS).

Click save button, system prompts for rebooting to get all setups activated.

After rebooting, open IE and input as below:

http://(DDNS server IP)/(virtual directory name)/webtest.htm

e.g.: http://10.6.2.85/DVR _DDNS/webtest.htm.)

Now you can open DDNSServer web search page.

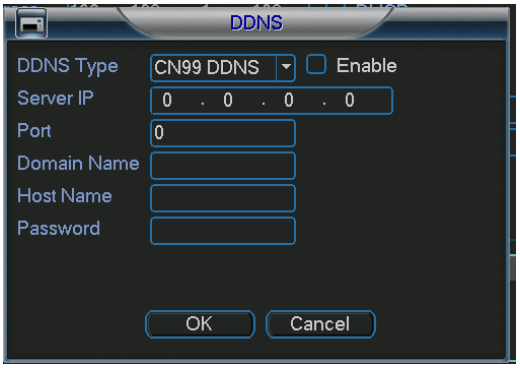


Figure 5-15

5.3.5.7 Alarm Server

You can configure the alarm in accordance with different alarm protocols. System can inform the alarm server when alarm occurs. See Figure 5-16.

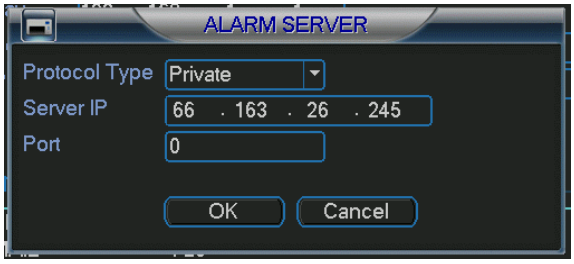


Figure 5-16

5.3.5.8 FTP

You need to download or buy an FTP utility to establish an FTP server.
Please install Serv-U FTP SERVER first. From “start” -> “program” -> Serv-U FTP Server -> Serv-U Administator. Now you can set user password and FTP folder.
Please note you need to grant write permissions to the FTP upload user. See Figure 5-17.

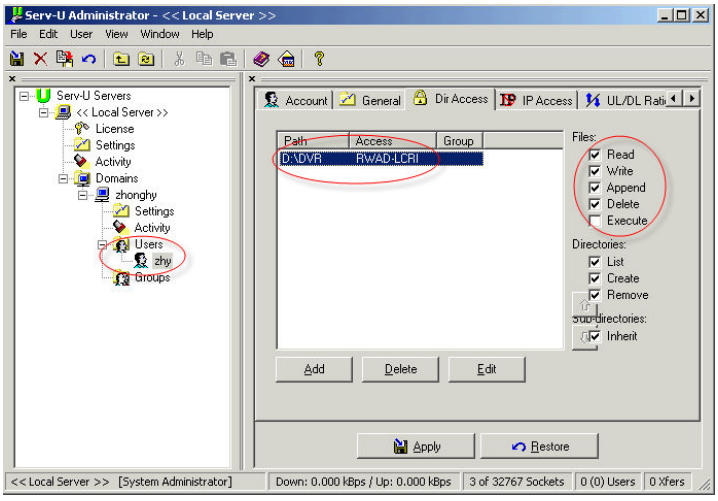


Figure 5-17

You can use a PC or FTP login tool to test if the setup is right or not.
For example, you can login user with ZHY to FTP://10.10.7.7 and then test if it can modify or delete the folder or not. See Figure 5-18.

Internet Explorer
To log on to this FTP server, type a user name and password.
FTP server: 10.10.7.7
User name:
Password:
After you log on, you can add this server to your Favorites and return to it easily.
Log on anonymously
Log On
Cancel

Figure 5-18

The system also supports the upload of multiple DVRs to one FTP server. You can create multiple folders under this FTP.
In Figure 5-9, select FTP and then double click mouse. You can see the following interface. See Figure 5-19.

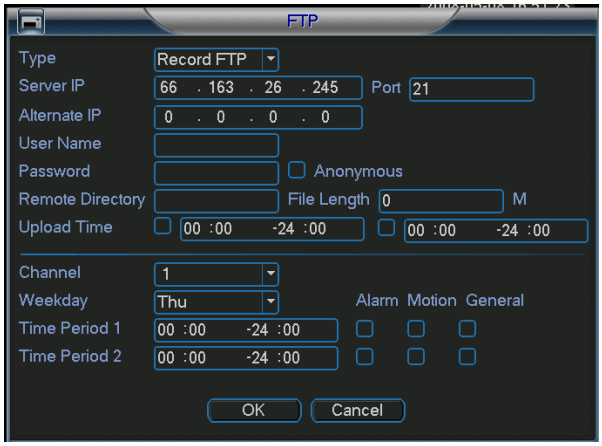


Figure 5-19

Please highlight the icon ☐ in front of Enable to activate the FTP function.
Now the FTP feature can upload alarm video and motion detection video. Note, when you are using this function, please make sure the current upload channel is in motion detection or alarm record status and there is video available.
Here you can input FTP server address, port and etc.

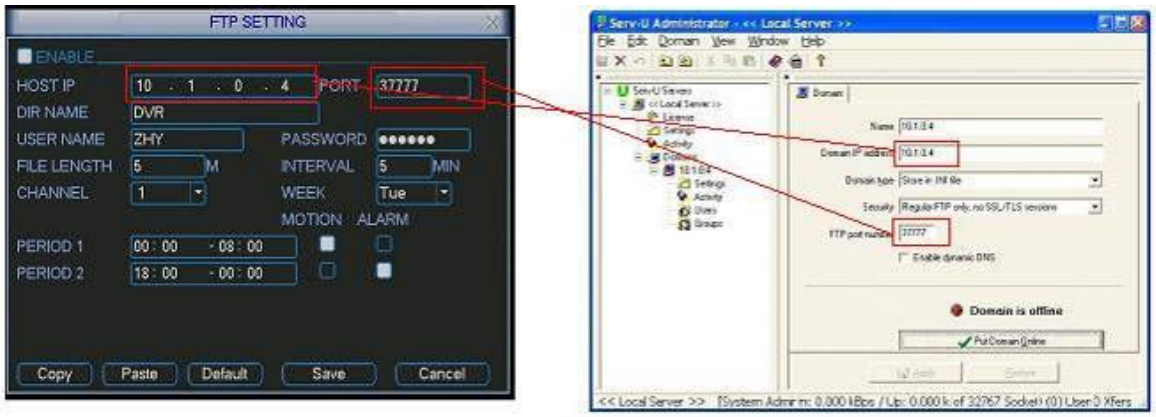


Figure 5-20

- File length: upload file length. When the value is larger than the actual file length, the system will upload the whole file. When this value is smaller than the actual file length, system only uploads the set length and automatically ignores the left section.
- When interval value is 0, the system will upload all corresponding files.
- Period 1 and period 2: you can set two periods: one for each recording type.

System file name is shown as in Figure 5-21.

Figure 5-21

5.3.6 Alarm

Please refer to Chapter 4.6 Alarm Setup and Activation.

5.3.7 Detect

Please refer to Chapter 4.5 Detect.

5.3.8 Pan/Tilt/Zoom

The pan/tilt/zoom setup includes the following items. Please select channel first. See Figure 5-22.

- Protocol: select corresponding PTZ protocol such as PELCOD.
- Address: input corresponding PTZ address.
- Baud rate: select baud rate.
- Data bit: select data bit.
- Stop bit: select stop bit.
- Parity: there are three options: none/odd/even.

After completing setup, click save. The system will return to the previous menu. For a detailed setup, please refer to Chapter 4.9 preset/patrol/pattern/scan.

Figure 5-22

5.3.9 Display

The Display setup menu is shown below. See Figure 5-23.

- Transparency: Here is for you to adjust the transparency. The value ranges from 128 to 255.
- Channel name: Here is for you to modify channel names. Please note all of your modifications here only apply to the DVR local end. You need to open the web or client end to refresh channel name.
- Time display: You can select to display time or not when the system is in playback.
- Channel display: You can select to channel name or not when the system is in playback.

- Overlay information: System displays some indicator icons on screen for reference.
- Display mode: you can select from the dropdown list: self-adaptive/VGA/TV.
- Enable tour: activate tour function.
- Interval: Please input proper interval value here. The value ranges from 5-200 seconds. During the tour process, you can use the mouse or press F2 or Shift to turn on the tour. Stands for tour enabled, stands for tour disabled.
- Motion tour type: System supports either 1/4 view tour.
- Alarm tour type: System supports either 1/4 view tour.

Please highlight icon to select the corresponding function.
After completing all the setups please click save button, system goes back to the previous menu.

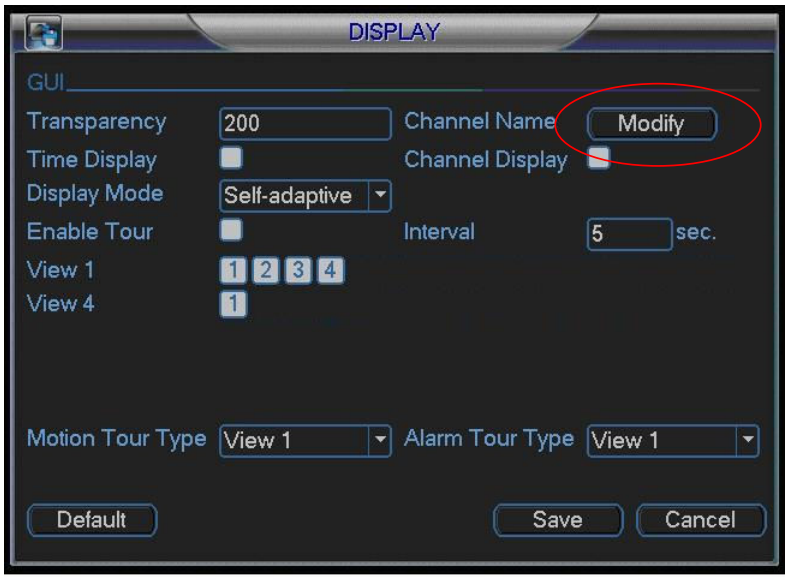


Figure 5-23

In Figure 5-23, click modify button after channel. You can see an interface is shown as in Figure 5-24. Please note all your modification here applies to the local display only. You need to refresh web or client-end to get the latest channel name. System max support 25-digital character.

Figure 5-24

In tour mode, you can see the following interface. On the right corner, right click mouse or click shift to control the tour. There are two icons: stands for tour enabled and stands for tour disabled. See Figure 5-25.

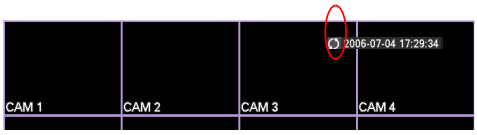


Figure 5-25

5.3.10 Default

Here you can restore your system to factory default settings. See Figure 5-26.

- Select all
- General
- Encode
- Schedule
- RS232
- Network
- Alarm
- Detect
- Pan/tilt/zoom
- Display
- Channel name

Please highlight icon to select the corresponding function.

After completing all the setups please click save button, system goes back to the previous menu.

Warning!

System menu color, language, time display mode, video format, and IP address will not maintain previous setup after default operation!

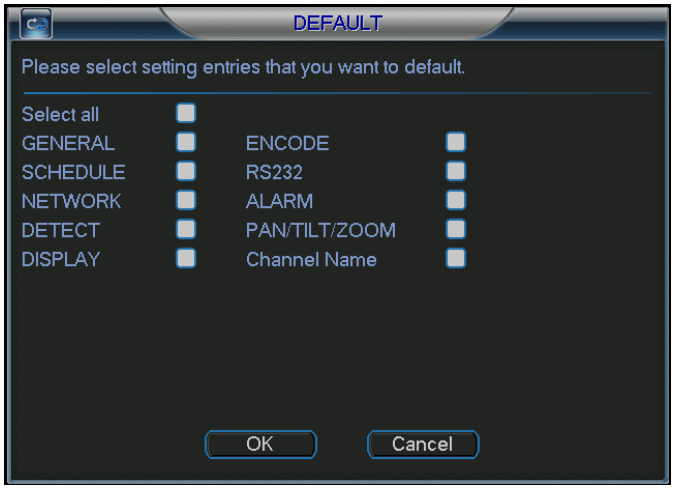


Figure 5-26

5.4 Search

Please refer to chapter 4.3 Search.

5.5 Advanced

Left click advanced icon in the main window, you will see an interface is shown as in Figure 5-27. There are total seven submenus: HDD management, alarm output, abnormity, manual record, account, auto maintain, and TV adjust.

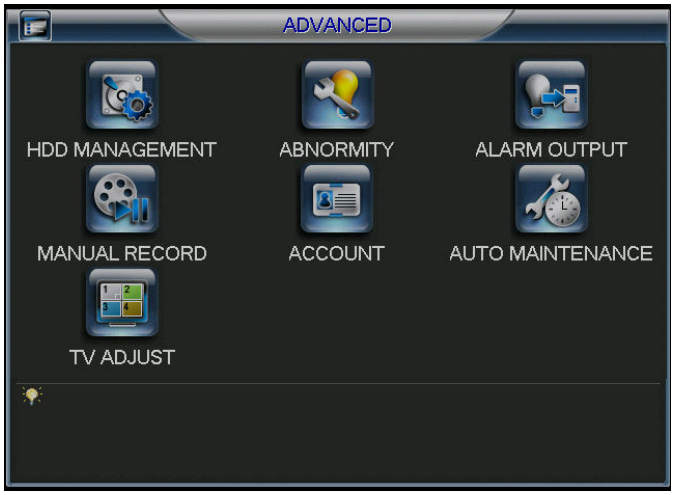


Figure 5-27

5.5.1 HDD Management

Here you can view and manage hard disks. See Figure 5-28.
You can set proper mode for each hard disk from the dropdown list.
After completing all the setups please click save button, system needs to reboot to get all the modification activated.

Figure 5-28

Click alarm set button, the interface is shown as below. See Figure 5-29. (This interface is just like the abnormity setup).

Please highlight icon ☐ to select the corresponding function.
You can manually enable one or more alarm setups. Alarm channel number ranges from 1 to 6. Delay value is from 0 to 240 seconds.
After completing setup, click save. The system will need to reboot to apply the changes.

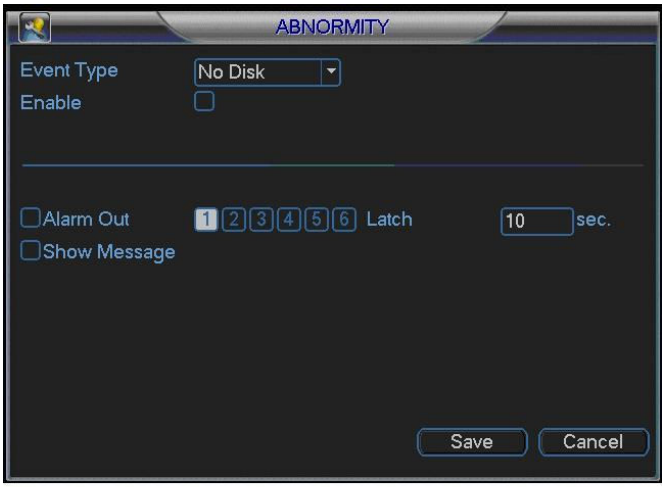


Figure 5-29

5.5.2 Abnormity

The Abnormity interface is shown as in Figure 5-30.

- Event type: There are several options for event triggers such as disk error, no disk and etc.
- Alarm output: alarm activation output port (multiple choices).
- Latch: Here you can set a delay time. The value ranges from 10s-300s. The system automatically delays the specified seconds in turning off alarm and activated output after the external alarm ends.
- Show message: the system can pop up a message in the local screen to alert you when an alarm occurs.

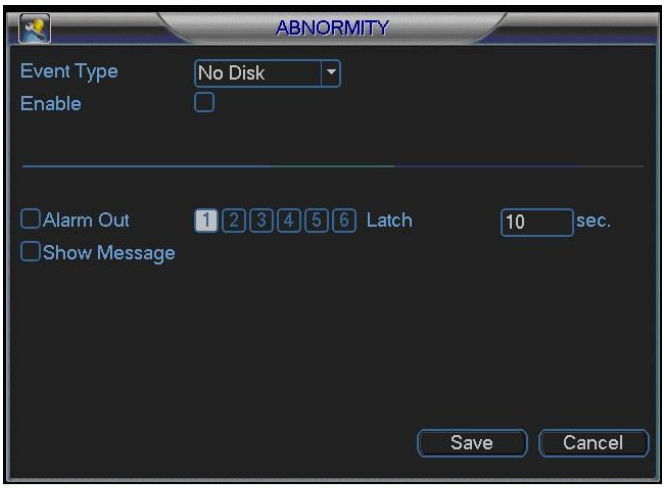


Figure 5-30

5.5.3 Alarm Output

Here you can manually configure alarm outputs.

Please highlight icon to select the corresponding alarm output. See Figure 5-31. After completing setup, click OK.

Figure 5-31

5.5.4 Manual Record

Please refer to Chapter 4.2.2 manual record.

5.5.5 Account

Here is for the account management console. Here you can:

- Add new users
- Modify users
- Add groups
- Modify groups
- Modify passwords

For account management, please note:

- Accounts are grouped into users and groups. There is no limit to the number of groups or users.
- By default, users are grouped as either admin or user.
- The user name and group name can consist of six characters. Each user name must be unique. There are three default user accounts. Each account's default password matches the user name: The "**Admin**" login has full administrative rights on the DVR. The "**User**" login has viewing and playback rights. Finally, the "**Guest**" login allows only live viewing access.
- One user can belong to only one group. User rights can not exceed group rights.

Once finished, click save to save your account setup.

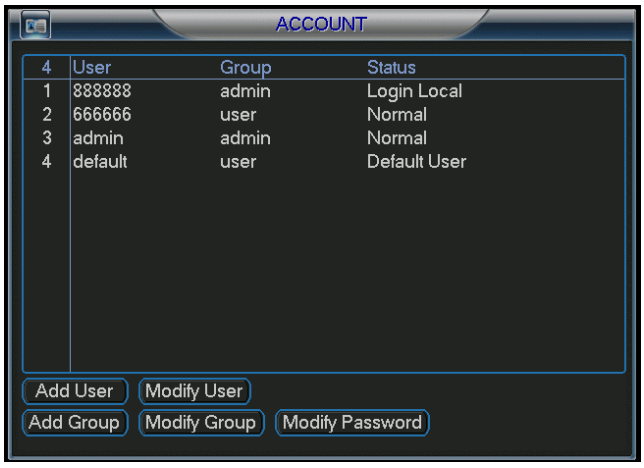


Figure 5-32

5.5.6 Auto Maintain

Here you can configure auto-reboot time and the auto-delete of old files. See Figure 5-33.

You can select the options from the dropdown list.

Please click O.K button after you completed the setup.

Figure 5-33

5.5.7 TV Adjust

Here you can adjust the TV output. See Figure 5-34.
Please drag the slider bar to adjust each item.
Please click OK button after you have completed the setup.

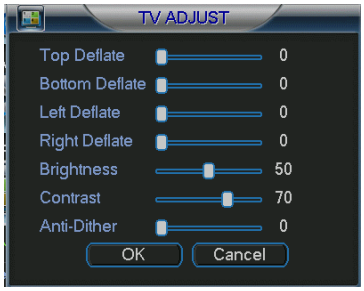


Figure 5-34

5.6 Information

Here you can view system information. There are a total of five submenus: HDD (hard disk information), BPS (data stream statistics), Log and version, and online user. See Figure 5-35.

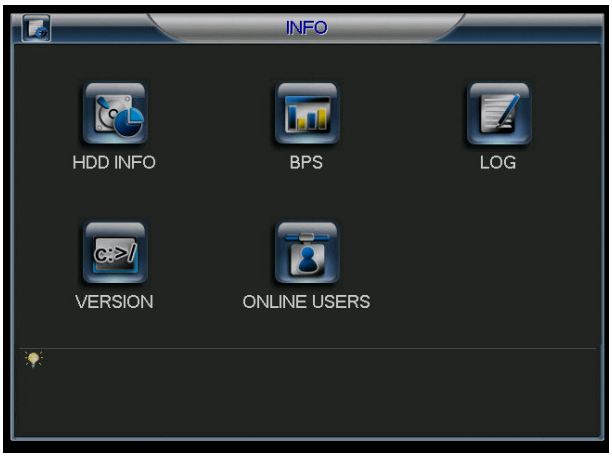


Figure 5-35

5.6.1 HDD Information

This menu lists the installed HDD's as well as the total space, free space, video start time and status. See Figure 5-36.

Note:

Remove a damaged hard disk before you add a new one.

If there is a hard disk conflict, check weather the hard disk time and system time are the same. If not, go to "Setting", and then "General" to modify the system time. At last, reboot the system to solve this problem.

If a disk is damaged, the system shows as "?"

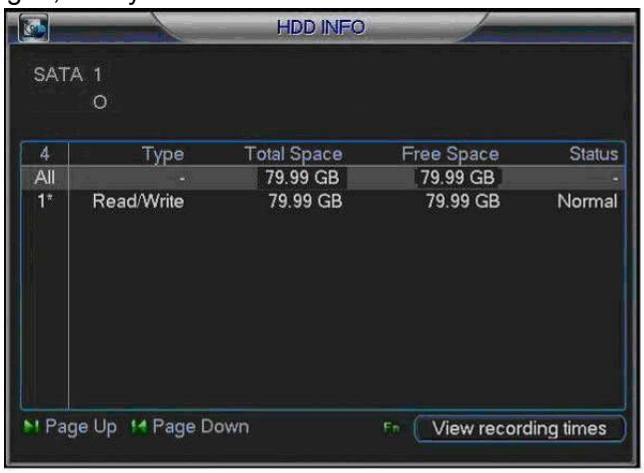


Figure 5-36

5.6.2 BPS

Here you can view current video data stream (KB/s) and occupied hard disk storage (MB/h). See Figure 5-37.

Figure 5-37

5.6.3 Log

Here you can view system log file. See Figure 5-38.

Log types include system operation, configuration changes, data management, alarm event, record operation, and log clear.
Select start time and end time, then click search to view the log files. You can use page up/down to view the additional files.

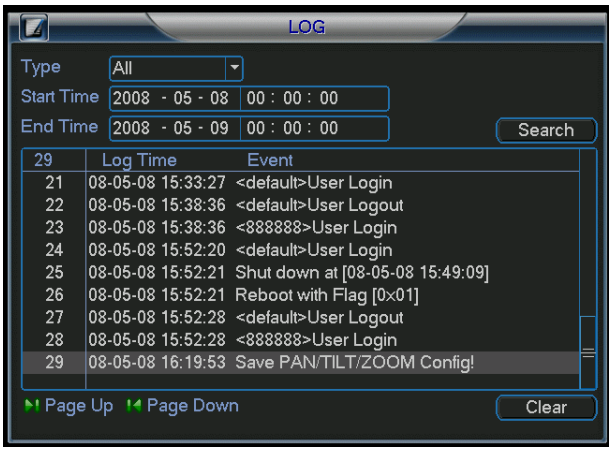


Figure 5-38

5.6.4 Version

Here you can view some version information. See Figure 5-39.

- Channel
- Alarm in
- Alarm out
- System version:
- Build Date

Figure 5-39

5.6.5 Online Users

Here you can manage online users. See Figure 5-40.
You can disconnect one user or block one user if you have the appropriate system rights.

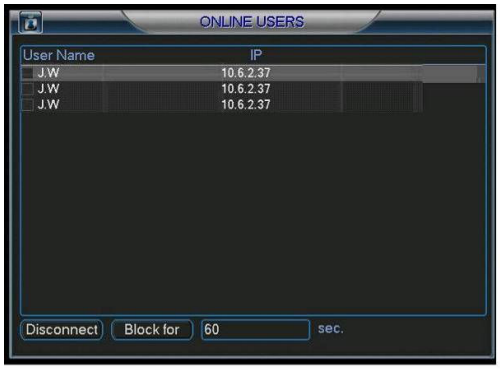


Figure 5-40

5.7 Exit

Left click exit, you can see a dropdown menu is shown as in Figure 5-41.

- Logout menu user: log out menu. You need to input password when you login the next time.
- Restart application: reboot DVR.
- Shutdown: system shuts down and turns off power.
- Restart system: system begins rebooting.
- Switch user: you can use another account to log in.

MAIN MENU
SHUTDOWN
Logout menu user
Logout menu user
Restart application
Shutdown
Restart system
Switch user
Logout the OSD menu or reset/restart the system. After idle for standby time (no inputs), the system will exit OSD automatically.

Figure 5-41

6 Controlling Pan/Tilt/Zoom Cameras

6.1 Go to Pan/Tilt/Zoom Menu

In the one-window surveillance mode, right click the mouse (press “fn” in the front panel or press AUX key in the remote control). The interface is shown as below: See Figure 6-1.

Figure 6-1

Click Pan/Tilt/Zoom, the interface is shown in Figure 6-2.
Here you can set the following items:

- Zoom
- Focus
- Iris

Click icon and to adjust zoom, focus and Iris.

Figure 6-2

In Figure 6-2, click the directional arrows (See Figure 6-3) to adjust the PTZ’s position. There are total eight directional arrows. (Note: there are only four directional arrows in DVR front panel.)

Figure 6-3

6.1.1 3D Intelligent Positioning Key

In the middle of the eight directional arrows, there is a 3D intelligent positioning key. See Figure 6-4 . Click the center to activate this option. The system should now go back to the single screen mode without the graphical directional pad. Drag the mouse in the screen to adjust section size.

Figure 6-4

Here is a sheet for you reference.

Name	Function key	function	Shortcut key	Function key	function	Shortcut key
Zoom		Near	▶		Far	▶▶
Focus		Near	◀		Far	▶
Iris		Close	II ◀		Open	▶ II

6.2 Preset /Patrol / Pattern /Border Function

In Figure 6-2 click the set button. The interface is shown as below:
Here you can set the following items:

- Preset
- Tour (patrol)
- Pattern
- Border

Figure 6-5

In Figure 6-2, click the page switch button you can see an interface is shown as in Figure 6-6.
Here you can activate the following functions:

- Preset
- Tour(Patrol)
- Pattern
- Auto scan
- Auto pan
- Flip
- Page Switch

Figure 6-6

6.2.1 Preset Setup

Note: The following setups are usually operated in the Figure 6-2, Figure 6-5 and Figure 6-6.

In Figure 6-2, use the eight directional arrows to adjust the camera to the proper position you desire.

In Figure 6-5, click preset and input preset number. The interface is shown as in Figure 6-7.

Add this preset to one patrol number

Figure 6-7

6.2.2 Activate Preset

In Figure 6-6 input your desired preset number in the No. ____, and click preset to activate it.

6.2.3 Tour Setup

In Figure 6-5, click Patrol button, you can see an interface is shown as in Figure 6-8. Input preset number and then add this preset to one patrol (tour).

Figure 6-8

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6.2.4 Activate Tour

In Figure 6-6, input tour number in the No. _____ and then click patrol (tour) button.

6.2.5 Pattern Setup

In Figure 6-5, click pattern and then click begin to start the pattern recording. The interface is shown as in Figure 6-9.

Please go to Figure 6-2 to modify zoom, focus, and iris. Go back to Figure 6-9 and click end button.

You can memorize all these setups as pattern 1.

System supports max 255 different patterns.

Figure 6-9

6.2.6 Activate Pattern Function

In Figure 6-6 input the desired pattern preset mode value in the No. _____, and then click pattern to activate it.

6.2.7 Border Setup

In Figure 6-5, click border you can see an interface is shown as in Figure 6-10. Go to Figure 6-2 and use the directional arrows to select the camera's left limit.

Now go back to Figure 6-10 and click left limit.

Repeat the above procedures to set the right limit.

Figure 6-10

6.2.8 Activate Border Function

In Figure 6-6, click auto scan button, the system begins auto scan. Correspondingly, the auto scan button becomes to stop button.

Click stop button to terminate scan operation.

6.2.9 Flip

In Figure 6-6, click page switch button, you can see an interface is shown as below. See

Figure 6-11. Here you can set auxiliary function.

Click page switch button again, system goes back to Figure 6-2.

Figure 6-11

7 WEB CLIENT OPERATION

All the operations listed below are based on a 16-ch DVR. There might be slightly difference in the interface due to different series.

7.1 Network Connection

Before web client operation, please check the following:

- Physical network connection
- TCP/IP settings on PC and DVR side. Refer to the network setup (main menu→setting→network)
- Use the windows command 'ping ***.***.***.***'(* DVR IP address) to check the connection. Usually the return TTL value should be less than 255.
- The system is compatible with WIN VISTA web control right now, however you will need to disable user account control. Navigate to Start→Control Panel→User Accounts. Double click user accounts and then disable user account control. You will need to restart after this.
- The system can automatically download the latest web control and the new version can overwrite the previous one.
- If you want to un-install the web control, run uninstall web.bat. Note: before you un-install, close all web pages; otherwise the un-installation might result in error.

7.2 Login

Begin by launching IE, and input the DVR IP address in the address bar. For example: if your DVR IP has an IP of 10.10.3.16, then input http:// 10.10.3.16 in IE address bar. See Figure 7-1

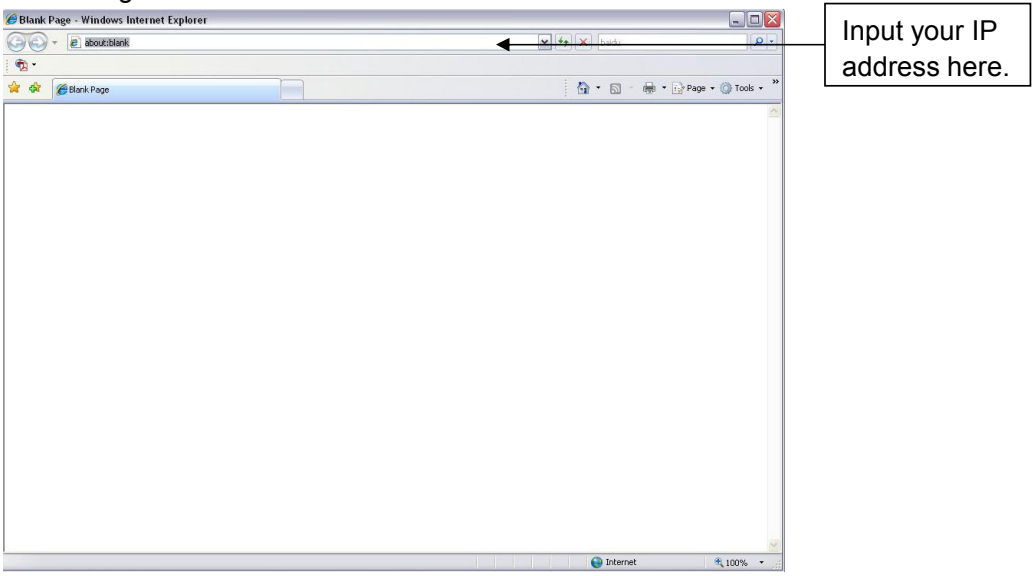

Figure 7-1

Your browser will prompt you to install "webrec.cab" Click on the information bar, and choose install. If you can't download the ActiveX file, modify your security settings as follows. See Figure 7-2.

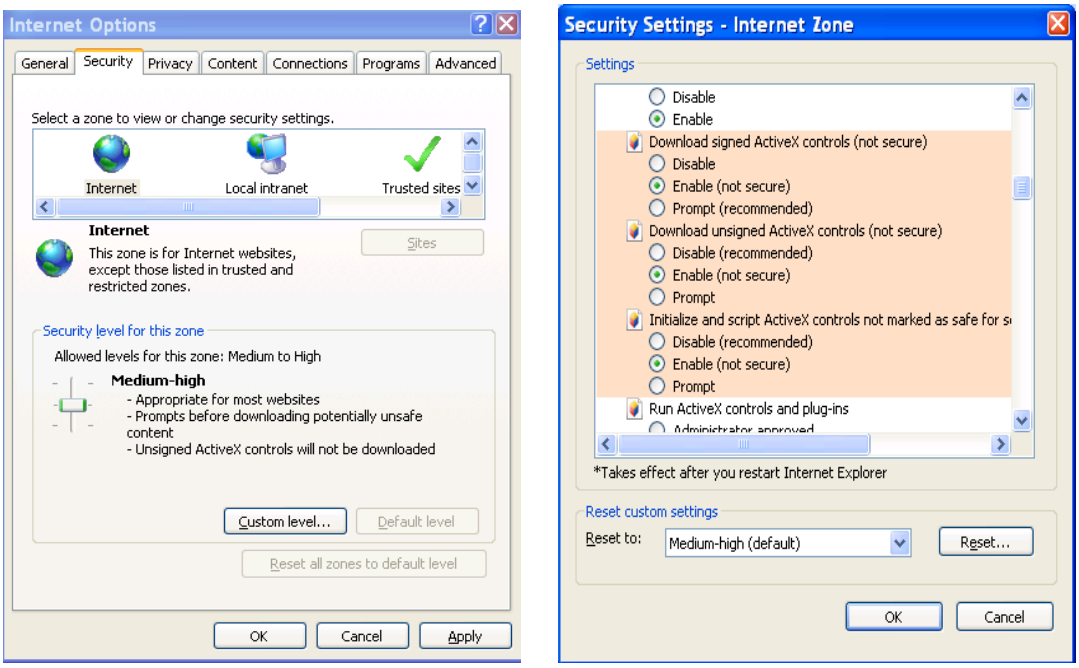

Figure 7-2

After installation, you will have the interface shown below. See Figure 7-3.
Input your user name and password. Default factory name is admin and password is admin. Note: For security reasons, you should modify your password after your first login.

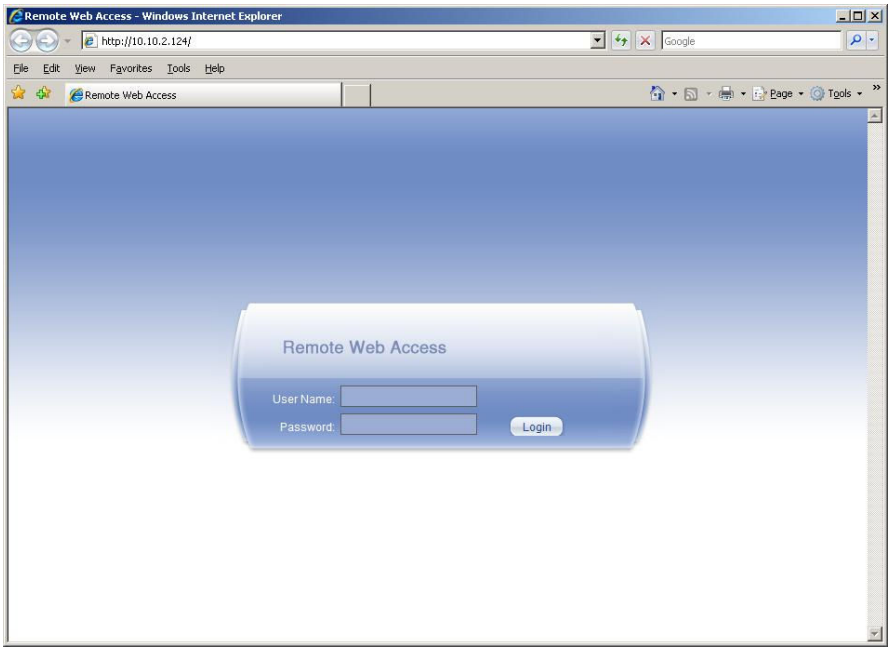

Figure 7-3

After you logging in, you will see the main window. See Figure 7-6.
This main window can be divided into the following sections.

- Section 1: there are five function buttons: setup (chapter 7.3), playback (chapter 7.4), event (chapter 7.5), info (chapter 7.6), log out (chapter 7.7).
- Section 2: there are channel number and three function buttons: start dialog, local play, and refresh.
- Section 3: real-time controls for PTZ (chapter 7.2.2), color (chapter 7.2.3) , and you can also select picture path and record path.
- Section 4: real-time monitor window. Note: current preview window is outlined by a green rectangle.
- Section 5: Here you can control the window layout. You can also select video priority between fluency or real-time.
  - ✧ Supported window layouts include: full screen/1-window/4-window/6-window/8-window/9-window/13-window/16-window/20-window/25-window/36-window. See Figure 7-4.

Figure 7-4

- ✧ Preview window switch. The system supports 1/4/8/9/16-window real-time preview. You will need proper rights to view preview modes.. See Figure 7-5.

Figure 7-5

Figure 7-6

7.2.1 Real-time Monitor

In section 2, select the channel name you want to view. The video will play in the selected window. For detailed function key information see Figure 7-7.

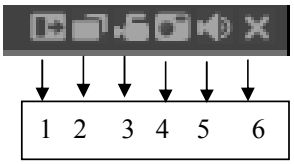

Figure 7-7

- 1: Digital zoom: Click this button to enable digital zoom. Now, you can left click and drag the mouse to select a target. Right click to return.
- 2: Change show mode: resize or switch to full screen mode.
- 3: Local record: When you click local record, the system will begin recording to your PC, and this button will become highlighted. You can go to system → local record to set video file path.
- 4: Capture picture: You can take a snapshot of important video. All images are stored in the system client folder \download\picture (default).
- 5: Audio: Turn on or off audio. (It has no relationship with recording the audio)
- 6: Close video.

Refer to Figure 7-8 for main stream information.

Figure 7-8

Refresh

You can use this button to refresh camera list.

Start Dialogue

You can click this button to enable two way talking.

Local Play

Click local play, and you will be prompted to open a saved video file. See Figure 7-9.

Figure 7-9

7.2.2 PTZ

Before operating a PTZ, make sure you have configured the PTZ protocol, address, and Baud Rate. (Refer to chapter 7.3.2 Setting → Pan/Tilt/Zoom).

Click the PTZ button, you will see the interface shown in Figure 7-10 .

Figure 7-10

7.2.2.1 Direction Key

In Figure 7-10, there are eight direction keys.

7.2.2.2 Speed

System supports eight-level speed. You can select from the dropdown list. Speed 2 is faster than speed 1.

7.2.2.3 Zoom/Focus/Iris

Here is a sheet for reference.

Name	Function key	Function	Function key	Function
Zoom		Near		Far
Focus		Near		Far
Iris		close		Open

Click the triangle icon in Figure 7-10, you will see the following interface. See Figure 7-11.

Figure 7-11

In Figure 7-11, click PTZ set, you will see the following interface. See Figure 7-12.

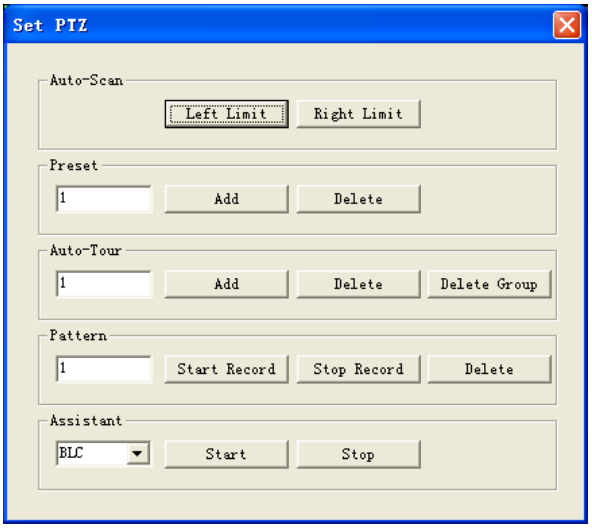

Figure 7-12

7.2.2.4 Auto Scan

In Figure 7-12, move the camera to your desired location and then click left limit. Next, move the camera again and then click right limit, to set a right limit.

7.2.2.5 Pattern

In Figure 7-12, you can input pattern value and then click start record, to trace PTZ movement. Go back to Figure 7-11 to begin camera operation. Once finished, you can click stop record. Now you have set one pattern.

7.2.2.6 Preset

In Figure 7-12, move the camera to your desired location and then input a preset value. Click add to set this as a preset location.

7.2.2.7 Auto tour

In Figure 7-12, input an auto tour value and a preset value. Click add to set the preset in the tour.

By repeating the above procedures you can add more presets in one tour.

7.2.2.8 Assistant

You can select the assistant item from the dropdown list. See Figure 7-13.

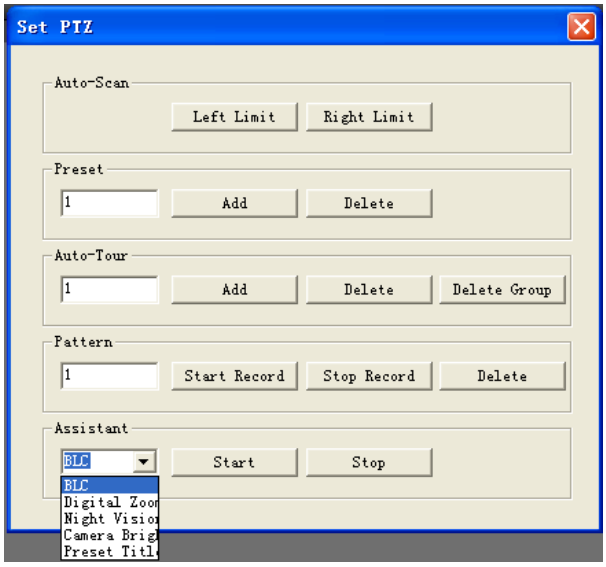

Figure 7-13

7.2.3 Color

Click color, in section 3, the interface is shown in Figure 7-14.
Here you can select one channel and then adjust its brightness, contrast, hue and saturation. (The selected channel has a green border).
Alternatively, you can click default, to use the default color setup.

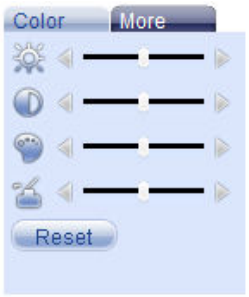

Figure 7-14

7.2.4 Picture Path and Record Path

Click more, in Figure 7-14, and you will see the interface shown in Figure 7-15.

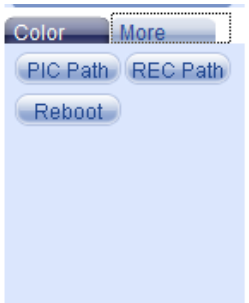

Figure 7-15

Click picture path to choose a directory for snapshots, as in Figure 7-16.

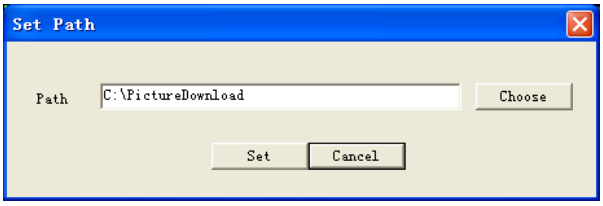

Figure 7-16

Click record path to choose a directory for locally recorded video, as in Figure 7-17.

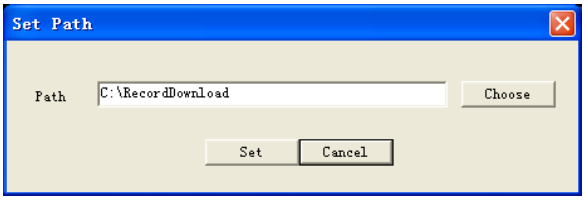

Figure 7-17

Clicking reboot will prompt you to reboot the system. Click OK to continue.

7.2.5 Menu Interface Switch

Put your mouse on the PTZ control bar until you see the following icon. See Figure 7-18.

Figure 7-18

Left click your mouse and then drag it to the channel control status bar. You will notice the two menus interface switched positions. See Figure 7-19. You can compare the following interface with Figure 7-6.

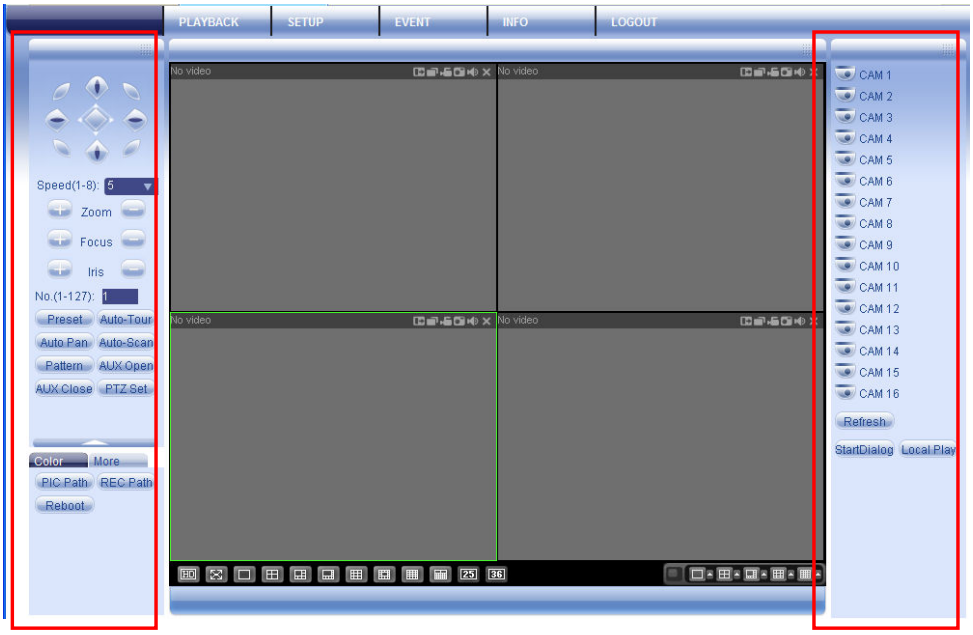

Figure 7-19

7.3 Setup

In the main window, click Setup; you will see an interface as shown in Figure 7-20.

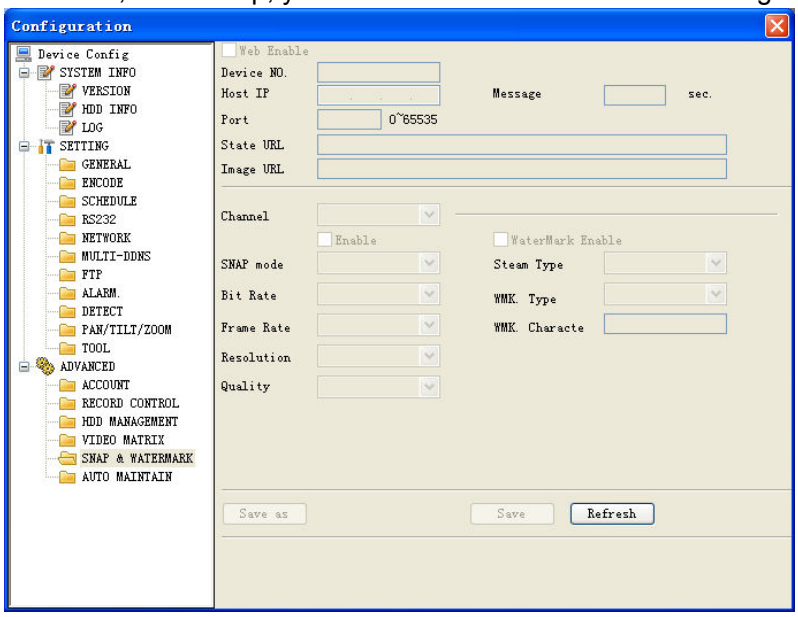

Figure 7-20

7.3.1 System Information

Click device configuration, and you will see the following interface. See Figure 7-21.

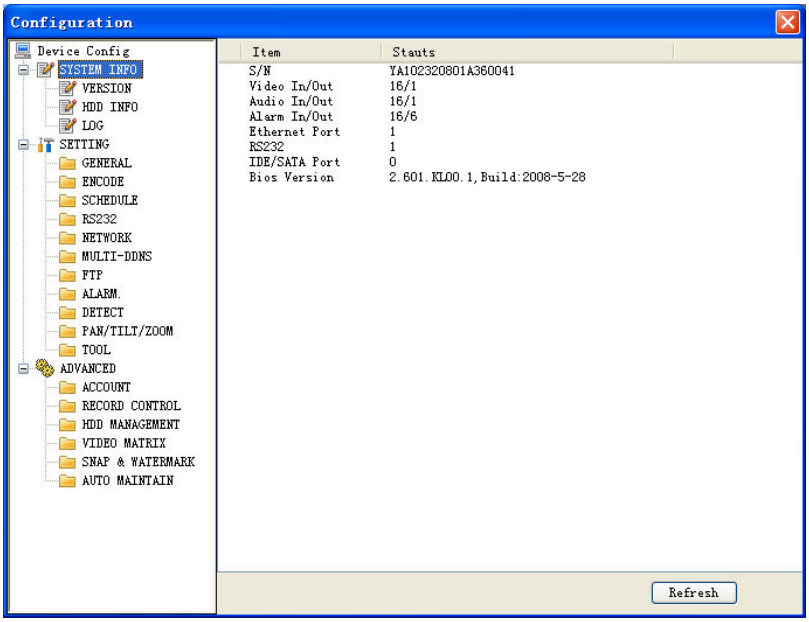

Figure 7-21

- **Version**

Click version, and you will see corresponding HDD information for reference. See Figure 7-22.

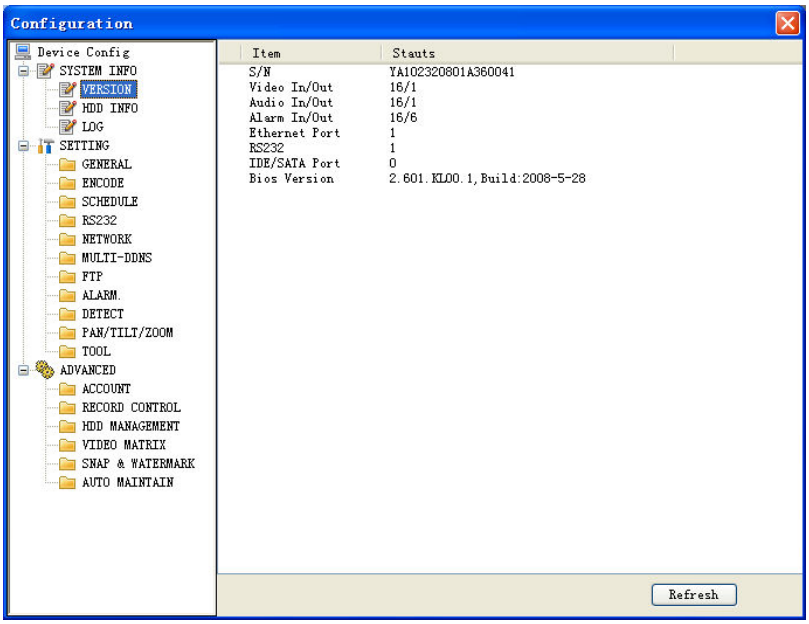

Figure 7-22

- **HDD Information**

Here you can view the number of HDD's, HDD status, total volume and free space. See Figure 7-23.

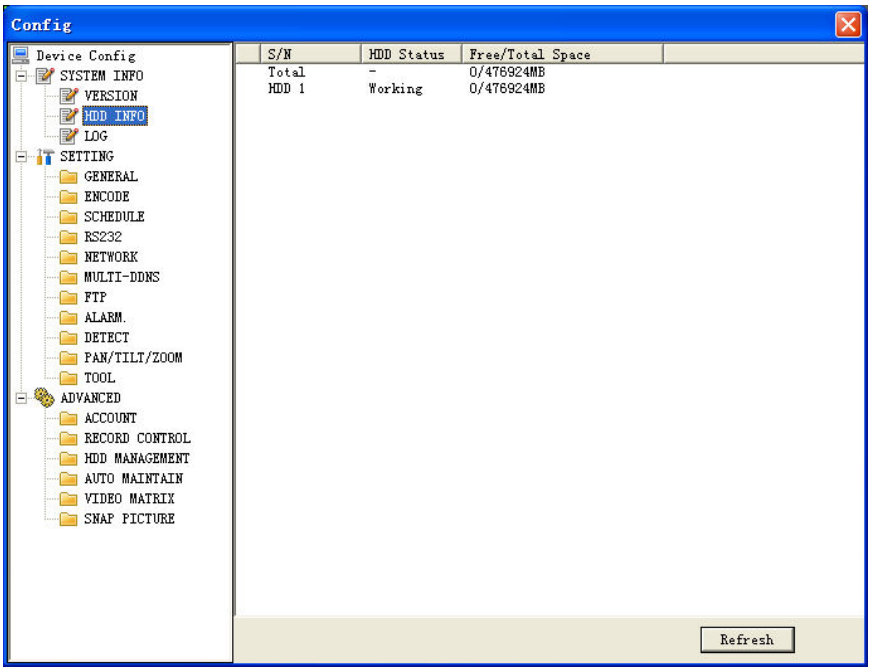

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Figure 7-23

- **Log**

Click log, you will see an interface as shown in Figure 7-24. Here you can view current device log information, and filter these results using the 'Type' drop-down.

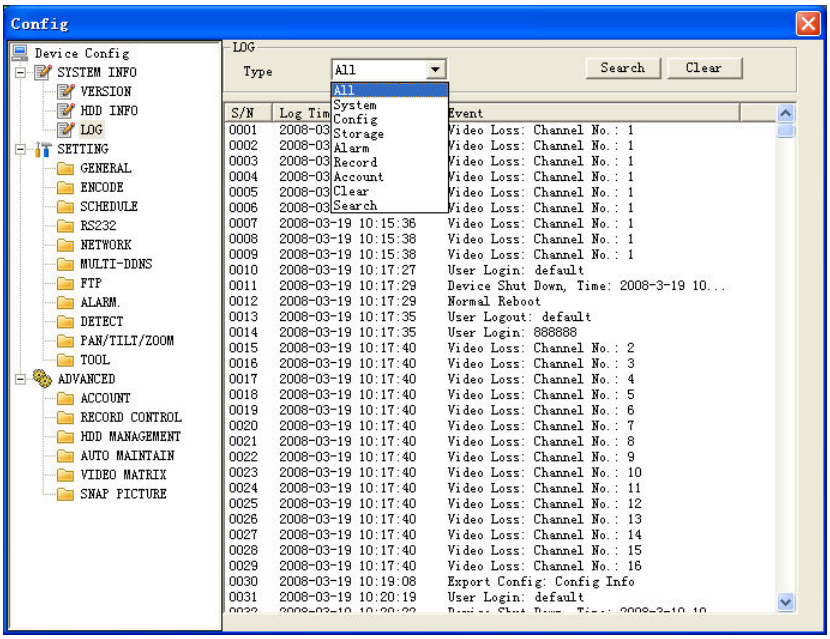


Figure 7-24

7.3.2 Setting

Setting includes the following items:

- ✧ General
- ✧ Encode setup
- ✧ Schedule
- ✧ RS232
- ✧ Network
- ✧ MUL-DDNS
- ✧ FTP
- ✧ Alarm setup
- ✧ Detect
- ✧ Pan/Tilt/Zoom
- ✧ Tool

Note: setups for different device series may vary. Refer to the corresponding user's manual.

- **General**

General interface is shown as in Figure 7-25.

- ✧ System time: This is where you can modify the system time. click 'Save' after your changes
- ✧ Date format: Here you can select the date format from the dropdown list.
- ✧ Data separator: select separator such as – or /.

- ✧ Time format: there are two options: 24-H and 12-H.
- ✧ HDD full: there are two options: stop recording or overwrite the previous files when HDD is full.
- ✧ Pack duration: Here you can select file intervals. Default setup is 60 minutes.
- ✧ Device No.: when you are using one remote control to manage multiple DVRs, you can give these DVRs unique addresses. Press RC, on your remote control and then input the correct device number, now you can control that respective DVR now.
- ✧ Video standard: NTSC. (for your reference only)

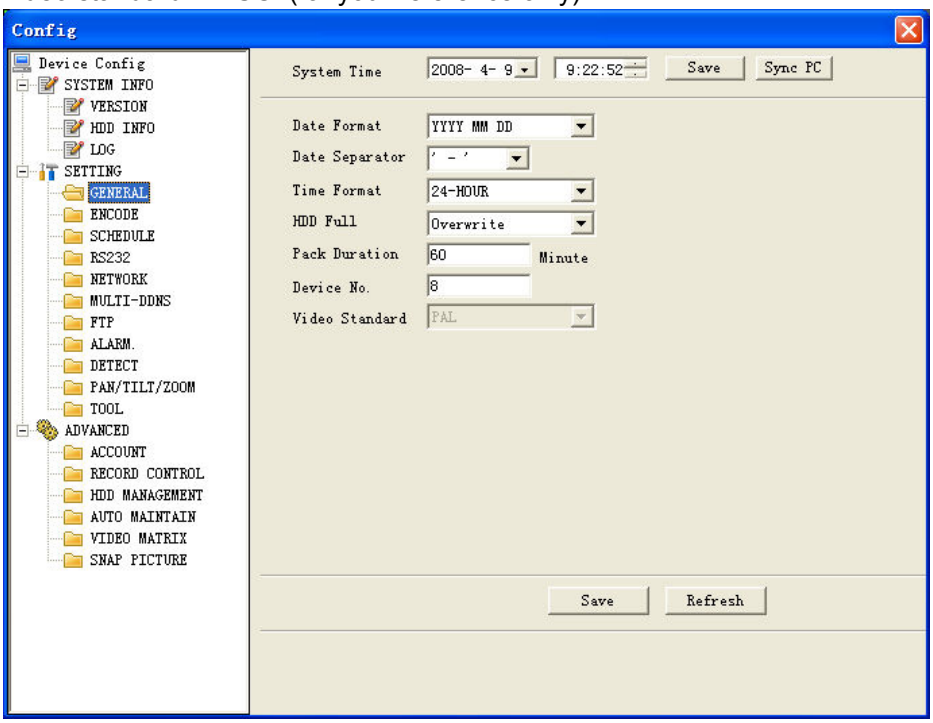


Figure 7-25

- **Encode**

Encode setup includes the following items. See Figure 7-26.
Here you can select

- ✧ Channel: This is where you can select a channel.
- ✧ Channel name: Modify channel name.
- ✧ Data stream: Regular and extra data stream.
- ✧ AV enable: Video/Audio. System only displays video by default. You need to manually enable audio function.
- ✧ Bit rate: There are two options: CBR and VBR. You can only set video quality in VBR mode.
- ✧ Frame rate: The value ranges from 1f/s to 25f/s (PAL) and 1f/s to 30f/s (NTSC).
- ✧ Compression: There is one option: H.264
- ✧ Resolution: D1/HD1/DCIF/CIF
- ✧ Quality: The value ranges from 1 to 6. The level 6 is the best video quality.

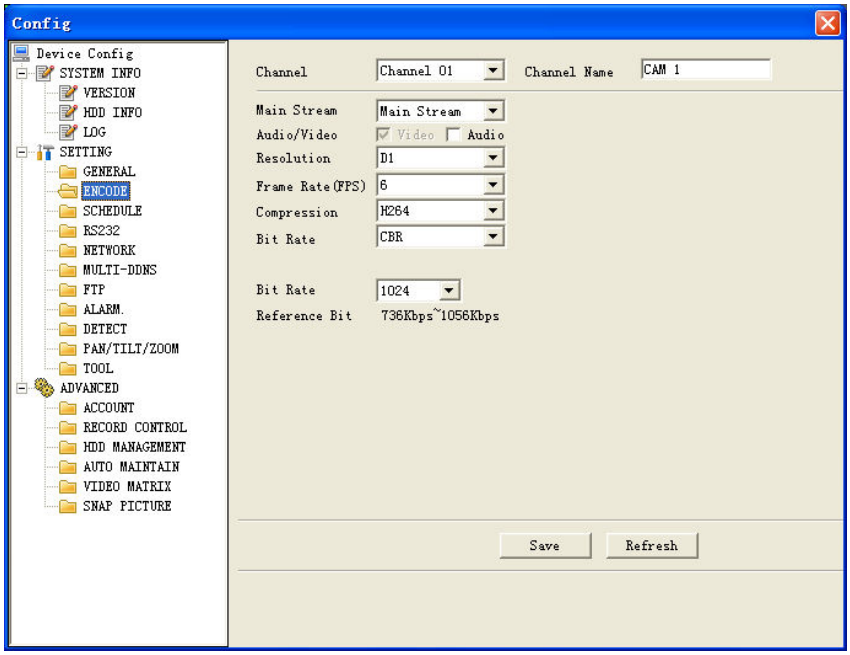


Figure 7-26

- **Schedule**

Schedule includes the following interface. See Figure 7-27.

When the DVR boots for the first time, it is already set for 24 hour, continuous recording. In this interface you can set a recording type, recording time and periods. Record types includes regular record(R), motion detection (MD) and alarm(A).

- ✧ Channel: select the channel number you desire.
- ✧ Week: you can select from the dropdown list.
- ✧ Prerecord: system can record the three to five seconds video before activating the record operation into the file.(Depends on data size)
- ✧ Period: There are six periods for you to define. Click set, next to the corresponding period. See Figure 7-28. note The setup here is based on a 24 hour cycle. E.g. 00.00 to 24.00.

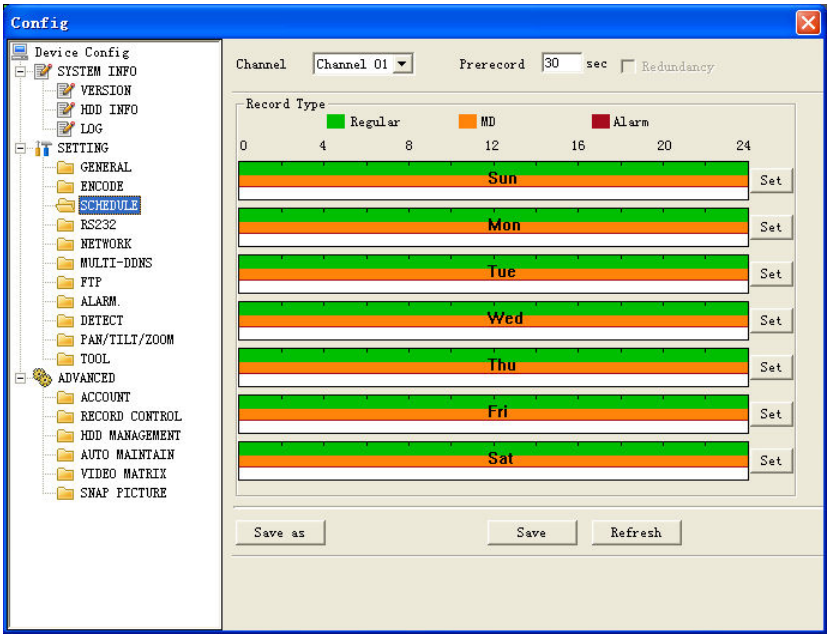


Figure 7-27

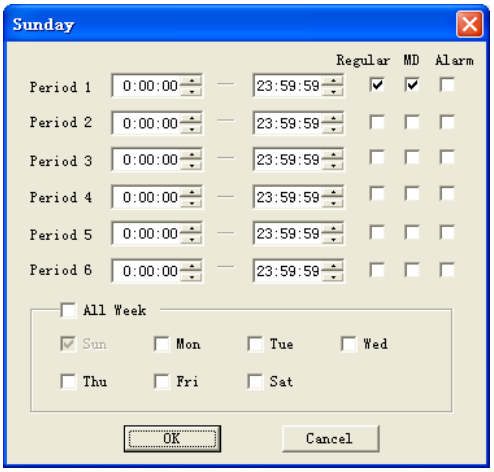


Figure 7-28

Tip:

After you finished setup for one channel, you can click “save as”, which will pop up the following interface. See Figure 7-29.Now you can copy one channels setup to additional channels.

Figure 7-29

- **Network**

Network interface is shown as in Figure 7-30.
This interface includes the following items:
Max: Here you can set the max number of connections. The value ranges from 0 to 10. 0 means no network connections will be allowed.
TCP port: default setup is 37777. Note port 37778 is for UDP traffic use only.
HTTP port: default setup is 80.
Transfer: Here you can select the priority between fluency/latency qualities.

✧ **Enable PPPoE**

Select 'PPPoE' under the service type to enable PPPoE function, and then input "PPPoE name" and "PPPoE password" you get from your ISP (Internet service provider). See Figure 7-30.
Once finished, click save. You will need to restart to activate your configuration. After rebooting, the DVR will connect to the internet automatically. The IP displayed in the IP address item is the public IP address. You can use client-end software to visit current IP now.

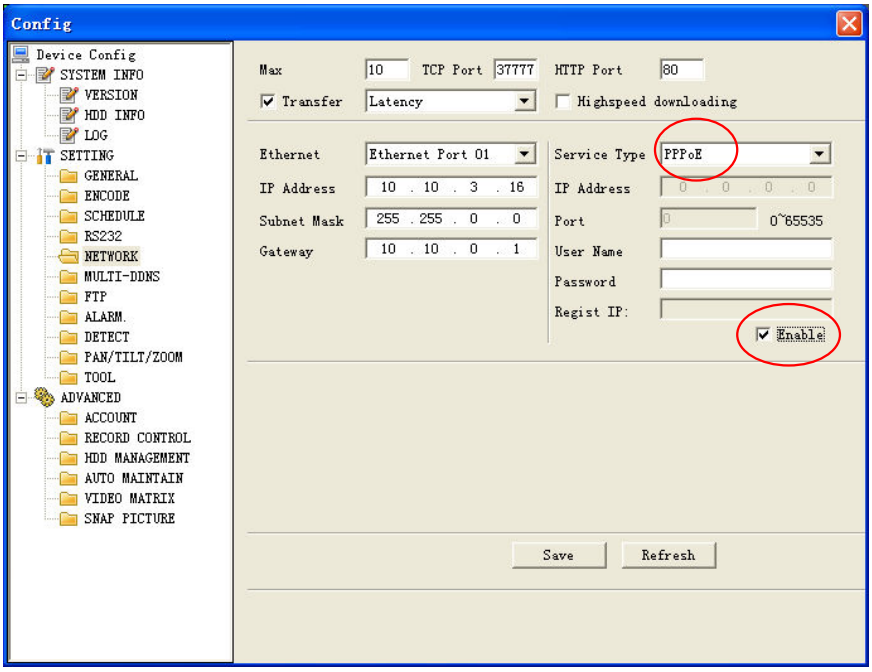


Figure 7-30

✧ **Enable DDNS**

The DDNS setup menu is pictured below. See Figure 5-15.
You will need a PC with a static IP address on the network. You also need the DDNS software running on this PC. In other words, this PC is a DNS (domain name server).
In the network DDNS menu, input your PPPoE name you get from you ISP and server IP (PC with DDNS).
Click the save button, the system will prompt you to reboot.
After rebooting, open IE and input the following:
http://(DDNS server IP)/(virtual directory name)/webtest.htm
e.g.: http://10.6.2.85/DVR _DDNS/webtest.htm.)
Now you can open the DDNSServer web search page.

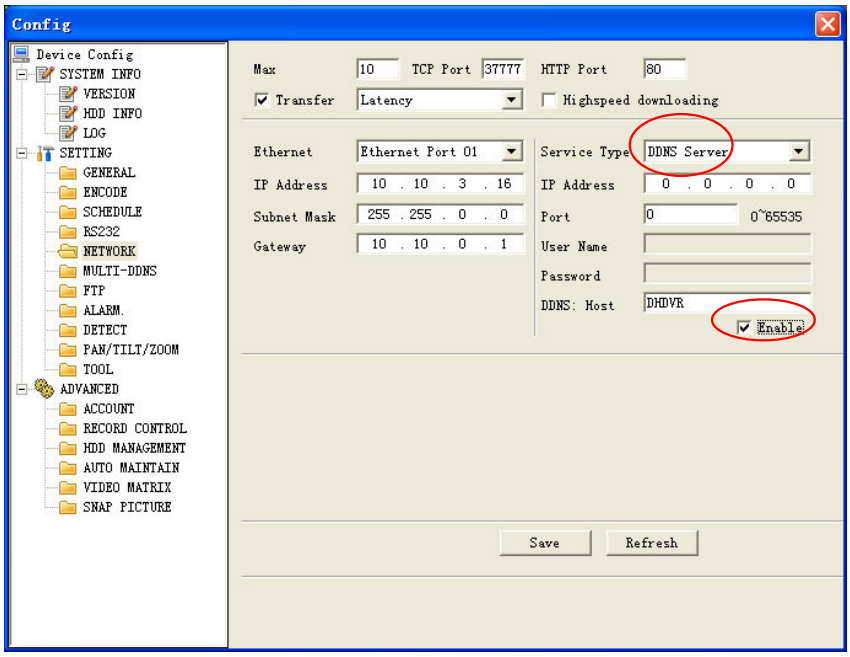


Figure 7-31

- **RS232**

RS232 includes the following items. See Figure 7-32.

- Function: There are various devices for you to select. The console setting is used to upgrade the device via a serial connection. The keyboard setting is for a special keyboard to control the device.
- Baud rate: You can select proper baud rate.
- Data bit: You can select proper data bit.
- Stop bit: There are three values: 1/1.5/2.
- Parity: there are three choices: none/odd/even.

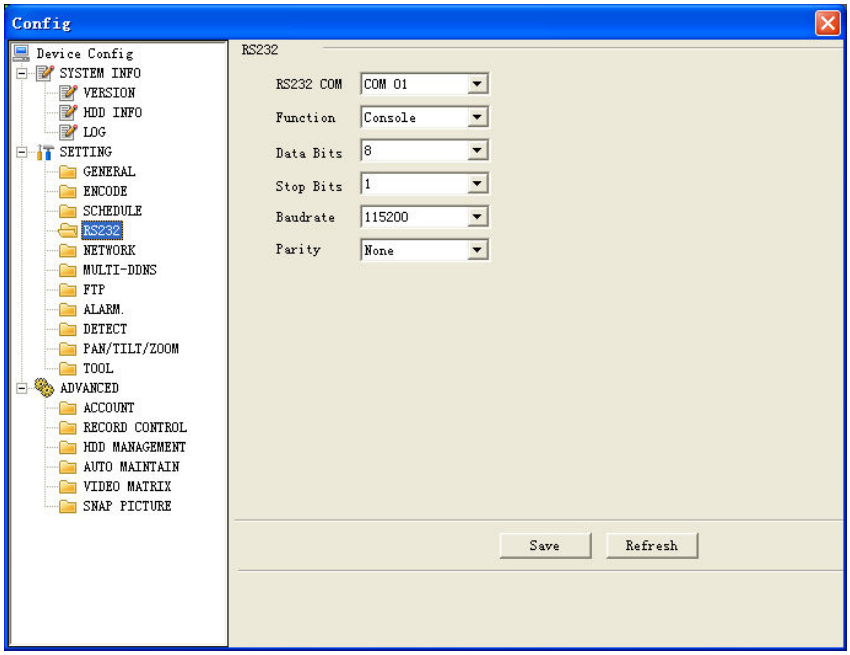


Figure 7-32

- Multi-DDNS

Here you can select a DDNS type to run updates with. See Figure 7-33.

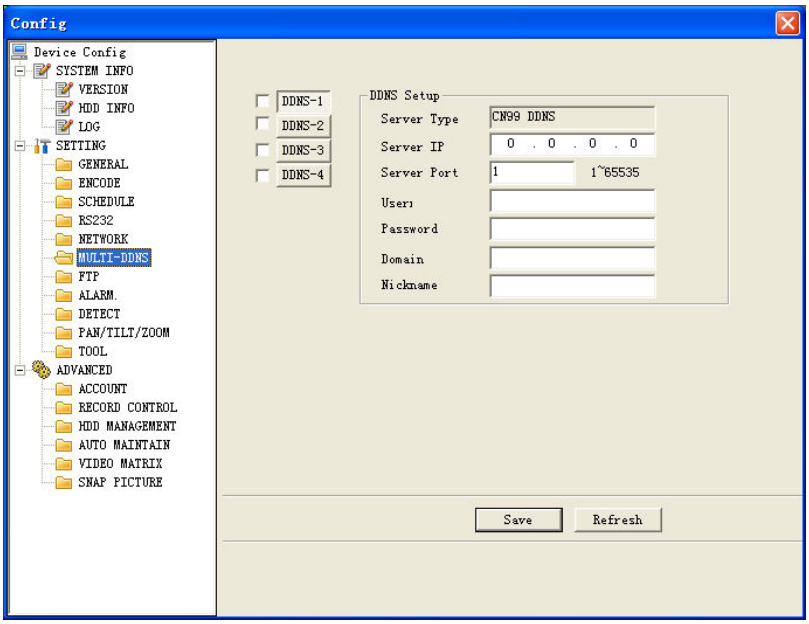


Figure 7-33

- **FTP**

After completing all required setup for the FTP server, the system will upload scheduled data to the specified FTP server regularly.

In Figure 7-34, you need to input the FTP server address, port, log in user name and password. Also, be sure to specify the destination directory to save files.

- File length: upload file length. When the value is larger than the actual file length, the system will upload the whole file. When this value is smaller than the actual file length, system only uploads the set length and automatically ignores the remaining section.
- When interval value is 0, the system will upload all corresponding files.
- Time period: Click set, you will see an interface as in Figure 7-35. You can check the box to select the file type. System supports multiple choices.

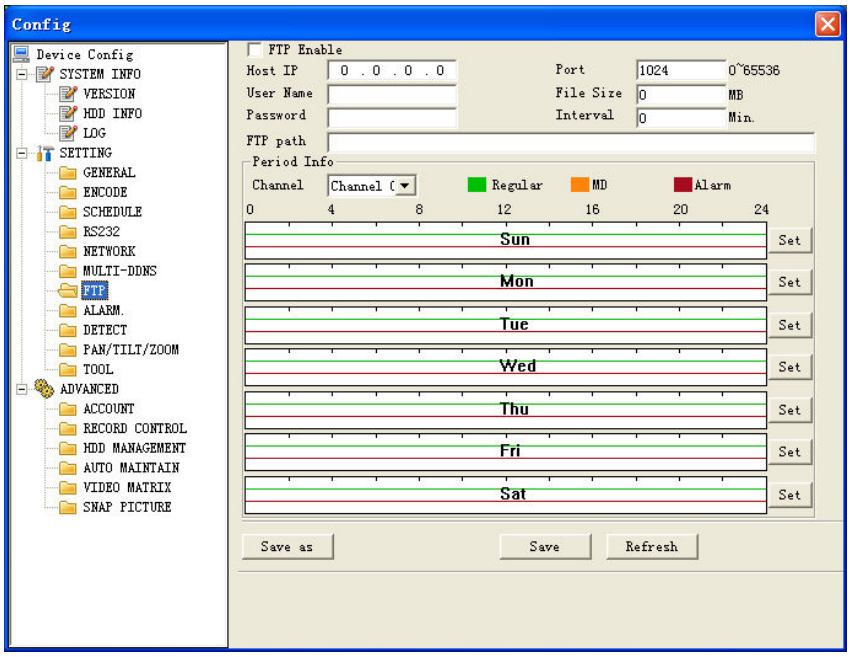


Figure 7-34

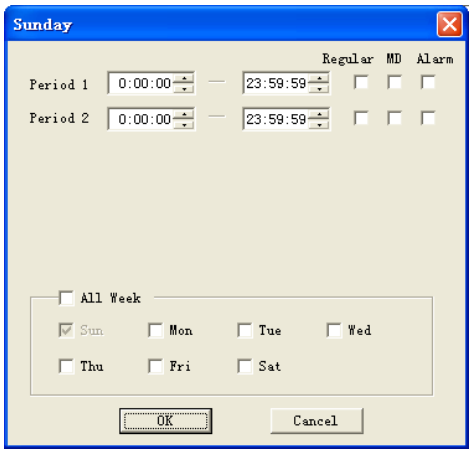


Figure 7-35

- **Alarm**

Note before alarm setup, you will need to properly connect alarm input and output device, send address and receive address. Click save, confirm current setup.
Alarm setup includes the following items. See Figure 7-36.

- Alarm in: Select channel number.
- Event type: There are two types: local input/network input.
- Type: Normal open or normal close.
- PTZ activation: PTZ activation: Here, you can relate a PTZ preset to a detection event. PTZ presets include functions such as go to a preset location, being a tour or pattern, etc. Click “select”, and you will see an interface as shown in Figure 4-21.
- Period: Click the set button, and you will see an interface as shown in Figure 7-36. Here you can set business days and non-business days.
- Show message: the system can provide pop up notifications on the local screen if this function is enabled.
- Record channel: you can select any channel to record alarm video (or multiple channels). Make sure alarm recording is configured in the schedule menu (Main Menu→Setting→Schedule). Also be sure to select schedule record in the manual record menu(Main Menu→Advance→Manual Record).
- Latch: when detection is complete, the auto trigger continues detecting for a specified time. The value ranges from 10-300 seconds.
- Tour: Here you can enable the tour function once an alarm occurs. It is a one-window tour (full-screen): Please go to chapter 5.3.9 Display for tour interval setup.

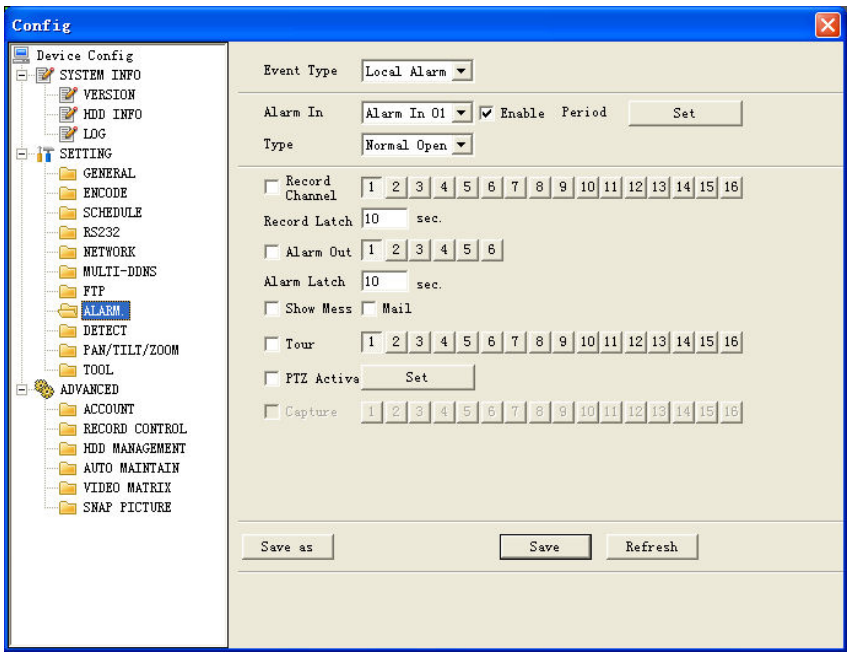


Figure 7-36

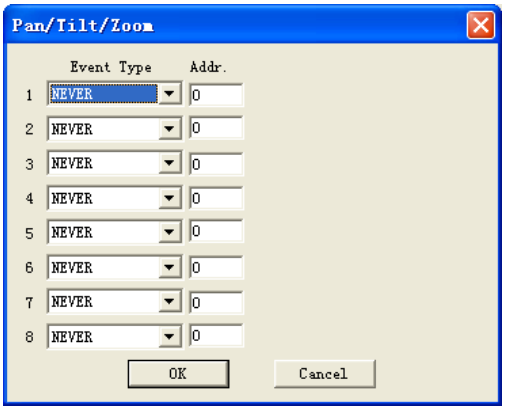


Figure 7-37

- **Detect**

Detect interface is shown as in Figure 7-38.
Here includes the following items:

- ✧ Channel: Select a channel from the dropdown list.
- ✧ Type: There are three detection types: Motion Detection/Video loss/Camera mask detection.
- ✧ Record channel: Here you need to select a channel to record when the event channel (selected above) has any type of detection (Note: if you do not specify a record channel, it will not record the event at all). Make sure you have set MD recording in the schedule interface (Main Menu->Setting->Schedule) and also be sure your manual record setting is set to schedule. (Main Menu->Advanced->Manual Record)
- ✧ Period: This is where you can set a secondary record period. Note: this will not take precedence over the original schedule. Click set, you will see an interface as shown in Figure 7-39. In Figure 7-39, click time set, you can see an interface is shown as in Figure 7-40. Here you can set time period.
- ✧ Sensitivity: There are six levels. The sixth level has the highest sensitivity.
- ✧ Region: This option is used to set the motion detection zones. The interface is shown as in Figure 7-41. There are 330 zones (22*15). Double right click your mouse and you can go to a full-screen display mode. Remember to click OK, in Figure 7-41 to save your motion detection zone setup.
- ✧ Alarm output: Here you can select activated external peripheral devices when alarms occur.
- ✧ Show message. System can alert you on the local screen if you enabled this function.
- ✧ Tour: Here you can enable the tour function when an alarm occurs in the corresponding channel. The system supports multiple-window tours. Go to chapter 5.3.9 Display for tour interval setup.
- ✧ PTZ activation: Click set; you will see an interface as shown in Figure 7-42. The system can go to a corresponding preset when the alarm occurs.

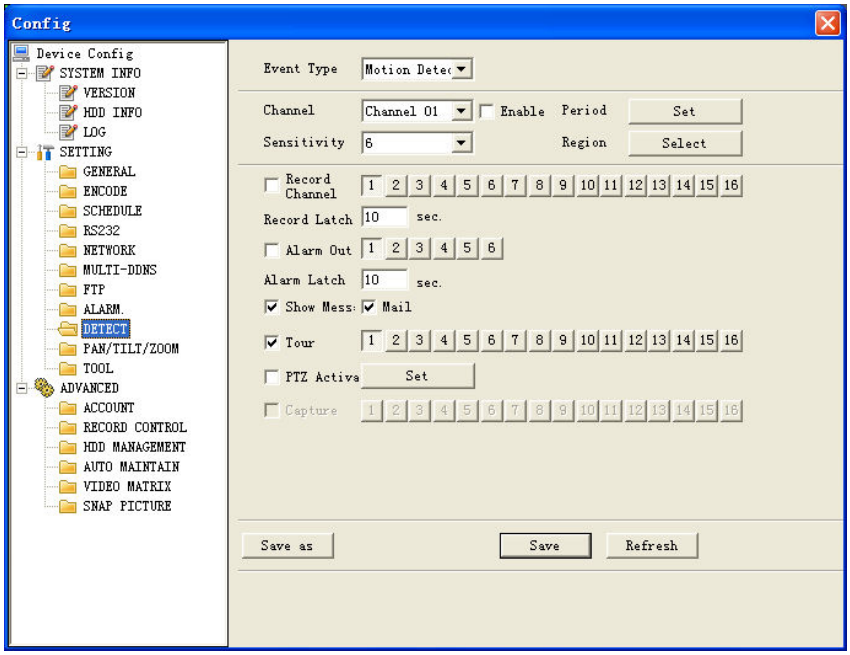


Figure 7-38

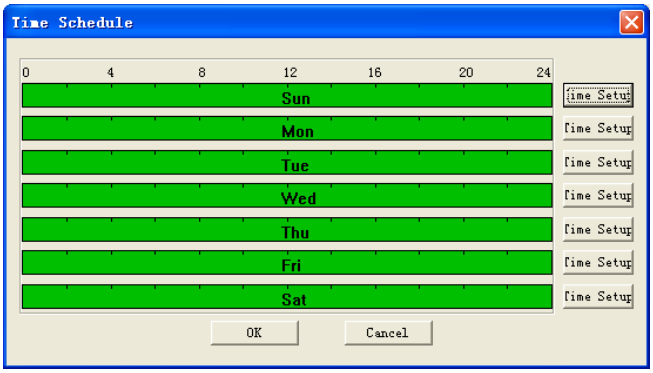


Figure 7-39

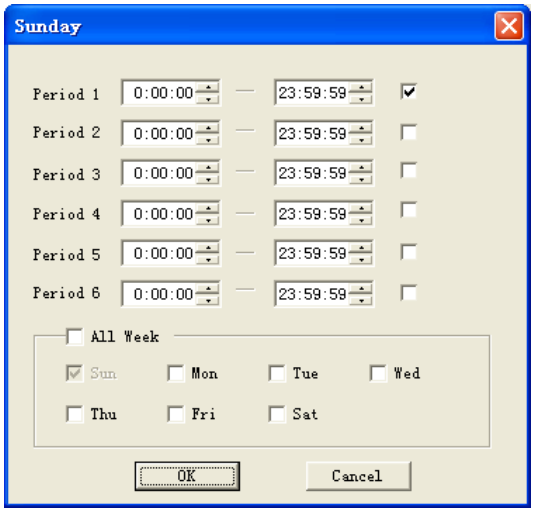


Figure 7-40

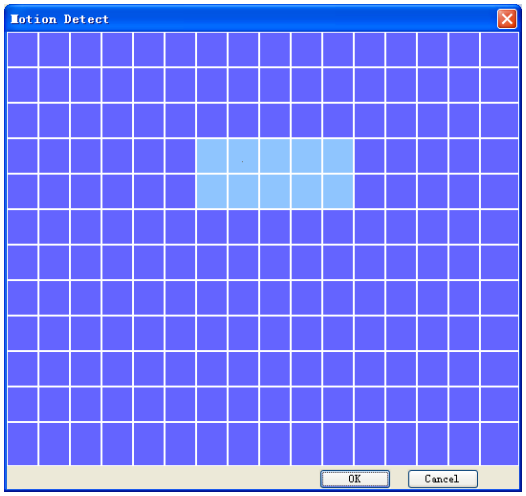


Figure 7-41

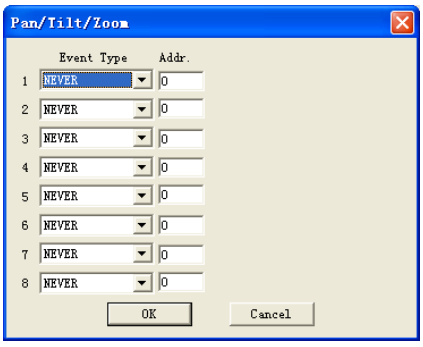


Figure 7-42

- **Pan/Tilt/Zoom**

Pan/Tilt/Zoom interface is shown as in Figure 7-43.
Note: Ensure you have assigned your dome and address at the camera, and all physical connections are correct.

- ✧ Channel: Select the channel that has your PTZ video.
- ✧ Protocol: Select the corresponding dome protocol.(such as Pelco)
- ✧ Address: Set corresponding dome address. Default value is 8. Note: your setup here needs to correspond with your dome address; otherwise you can not control the speed dome.
- ✧ Baud rate: Select the dome baud rate. Default setup is 9600.
- ✧ Data bit: Default setup is 8.
- ✧ Stop bit: Default setup is 1.
- ✧ Parity: Default setup is none.

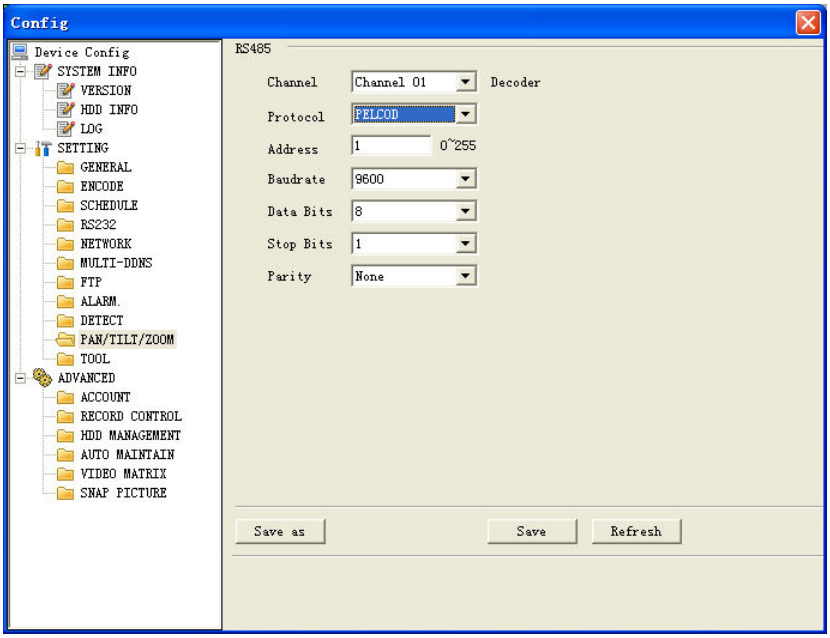


Figure 7-43

- **Tool**

Here you can export or import configuration information. See Figure 7-44.
Save configuration data: Click export config, to save the current setup as a .CFG file. See Figure 7-45.
Load configuration data: Click import config, to load a .CFG setup file.

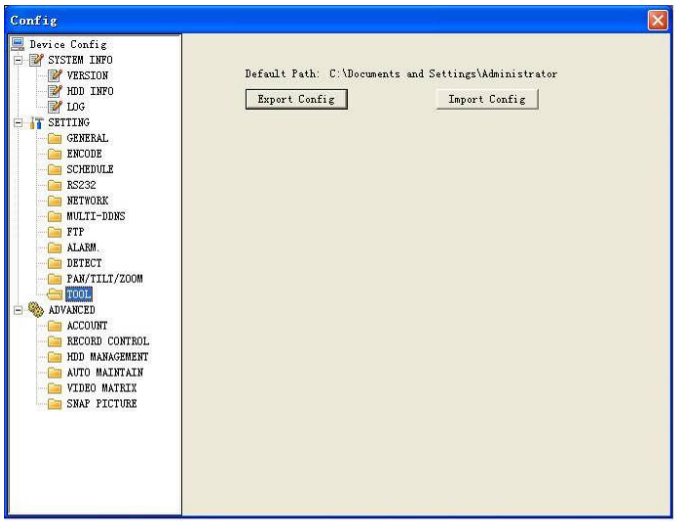


Figure 7-44

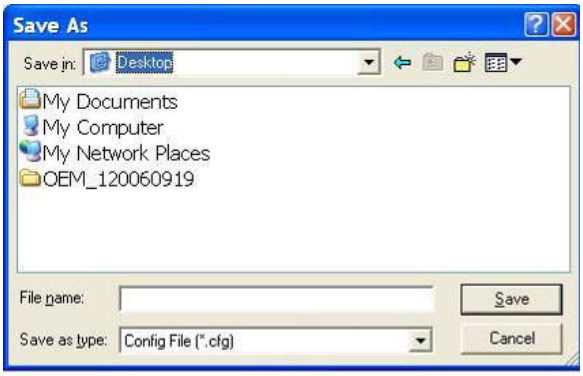


Figure 7-45

7.3.2.1 Advanced

Advanced includes the following items. See Figure 7-46.

- ✧ Account
- ✧ Record control
- ✧ HDD management
- ✧ Video matrix
- ✧ Snap & watermark
- ✧ Auto maintain

- **Account**

Account interface is shown as in Figure 7-46. Here you can add/delete users, add/delete groups, modify user or group rights, modify users passwords.

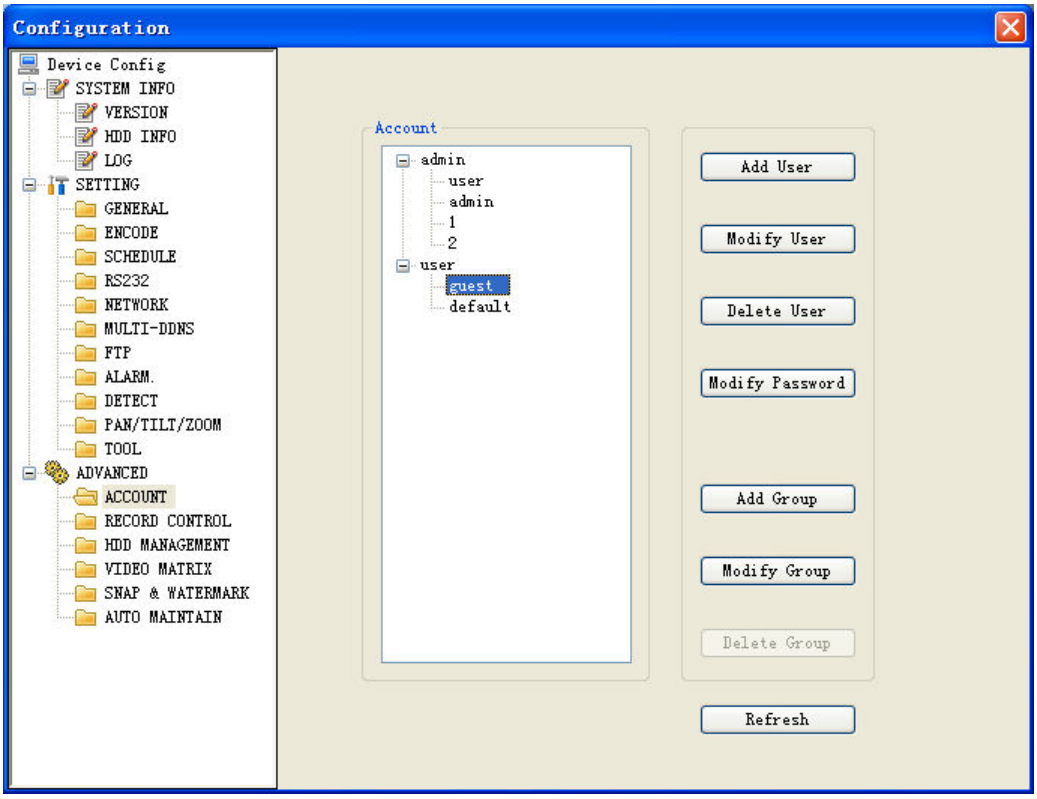


Figure 7-46

To add a group, click add group, and you will see the following interface. See Figure 7-47.

Here you can add one new group, and then select corresponding rights for the users contained within this group.

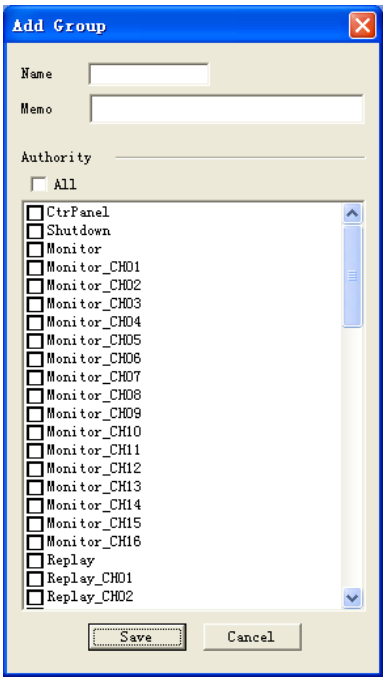


Figure 7-47

To add a user, click add user, and you will see the following interface. See Figure 7-48.

Here you can input a new username and password, and also select corresponding rights. Note: Your user and pass have a max limit of 6 characters and are case sensitive!

Also note that user permissions cannot exceed the group permissions which they are a part of.

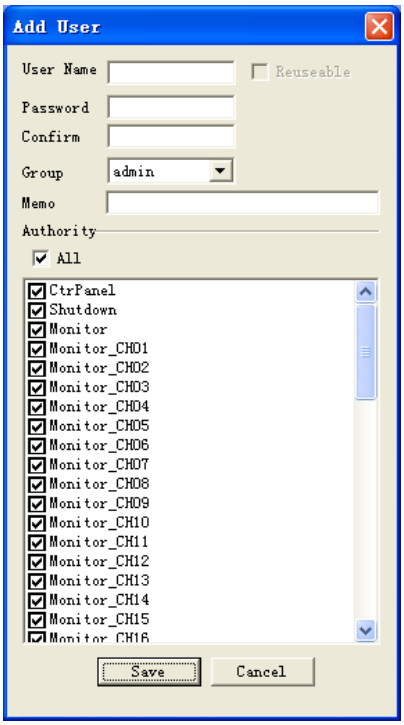


Figure 7-48

- **Record Control**

Record control interface is shown as in Figure 7-49.
Record control: Here you can adjust the record state for a corresponding channel.
Alarm output channel: Here you can select an alarm output channel to trigger. The DVR output channel can not support a large overload (It must be less than 1A). Too heavy of a current may result in relay damage. Use contactor if necessary.

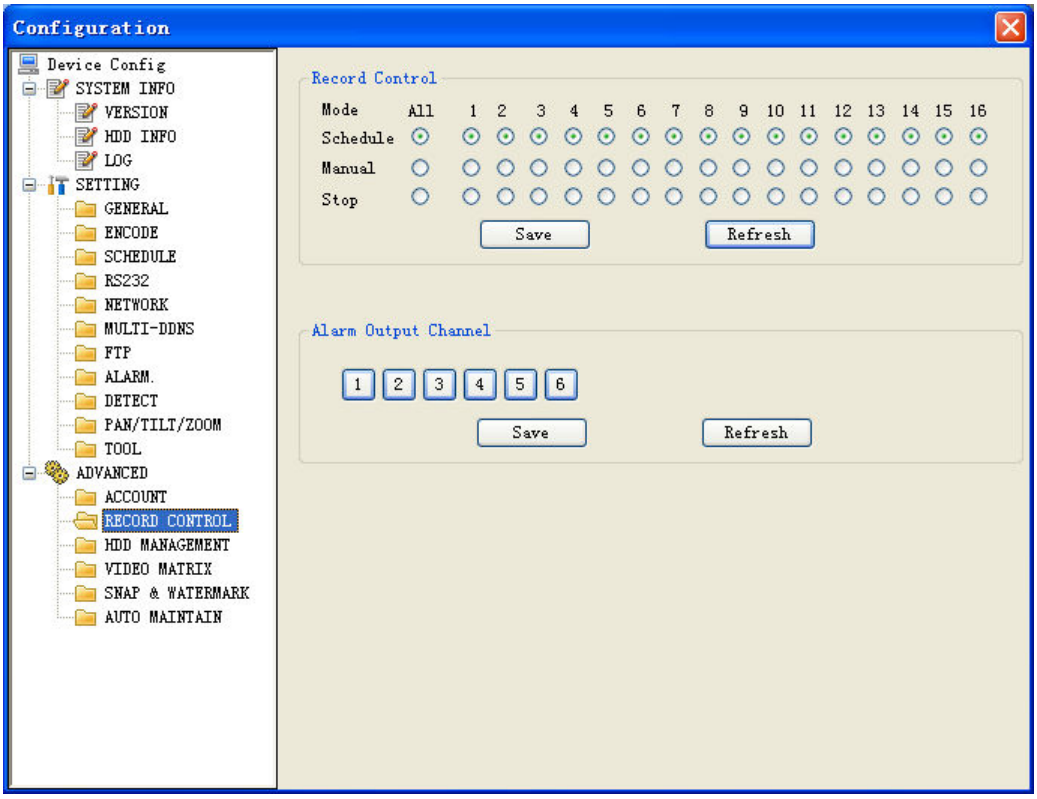


Figure 7-49

- **HDD management**

Select the HDD first, and then you can see the items on your right have become enabled. You can check the corresponding option here. See Figure 7-50.
After you have completed setup, click control HDD – you will see the DVR restart itself.

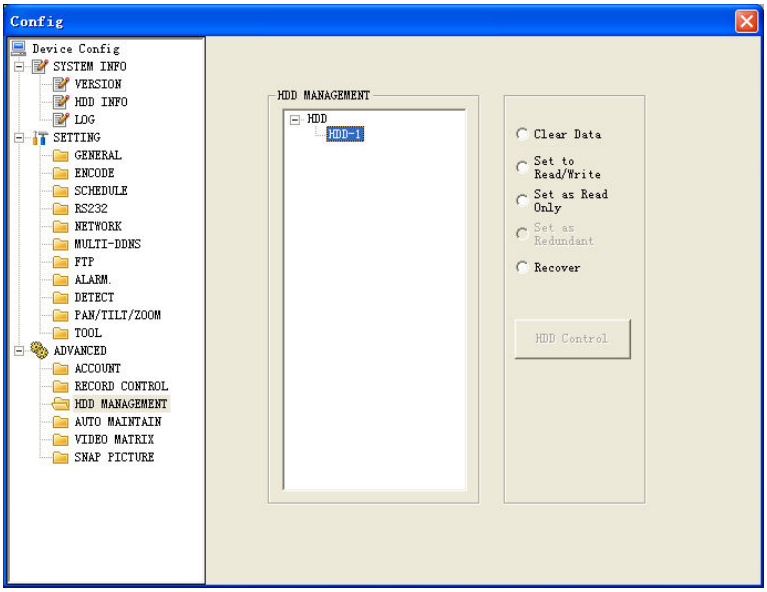


Figure 7-50

- **Auto maintenance**

Auto maintenance interface is shown as in Figure 7-51. Here you can enable/disable auto reboot or the auto deletion of old files. The DVR needs to support this operation to function properly.

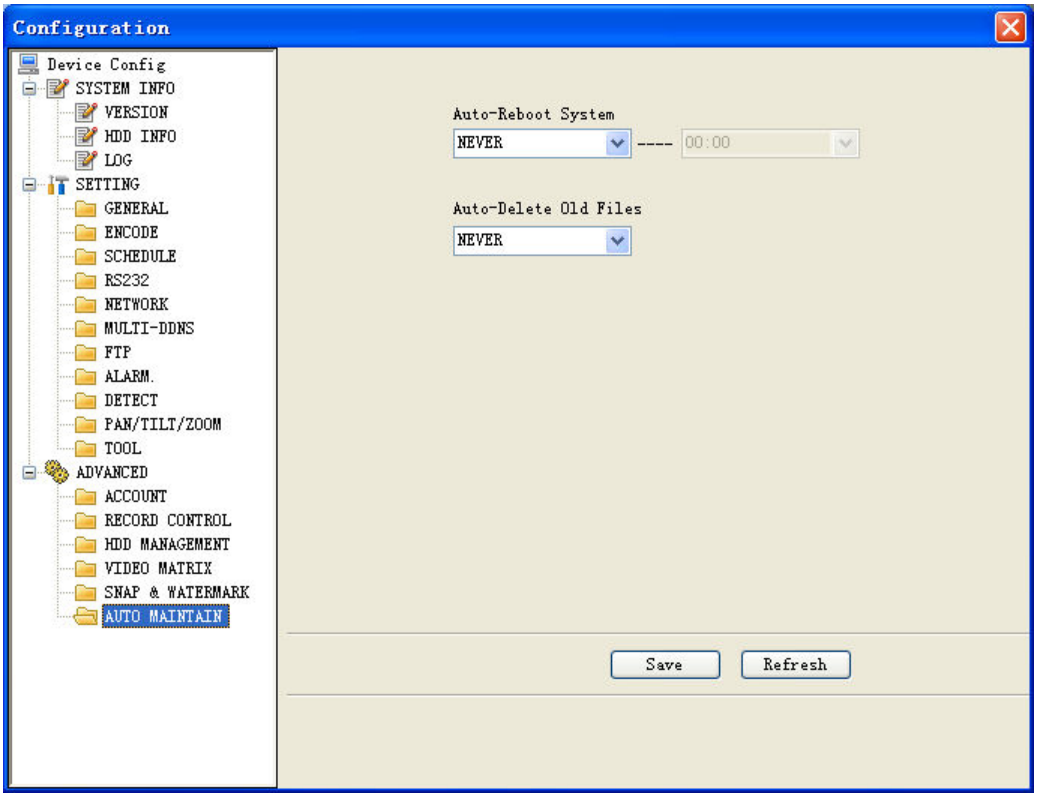


Figure 7-51

- **Video Matrix**

Video matrix interface is shown as in Figure 7-52. The DVR needs to support this function to work properly. From this menu, you are able to choose certain channels that you wish to be displayed in a sequential fashion and assign them to a specified matrix output.

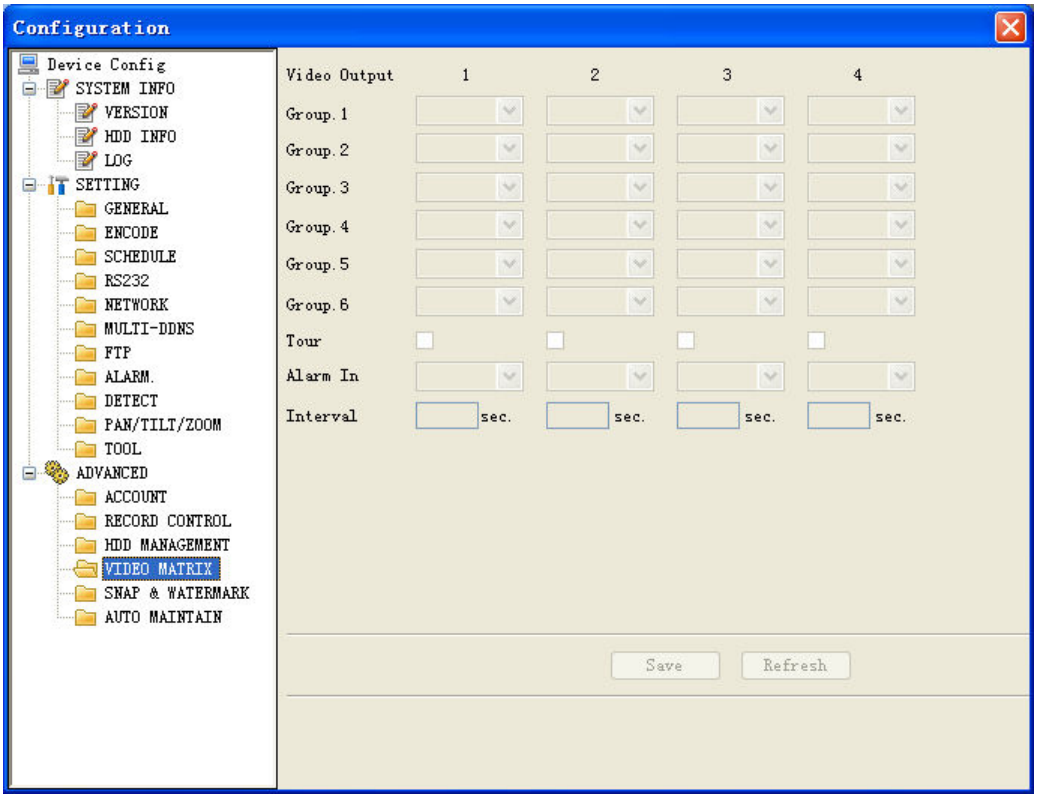


Figure 7-52

- **Snap & Watermark**

Snap & watermark interface is shown as in Figure 7-53. The DVR needs to support this function to work properly.

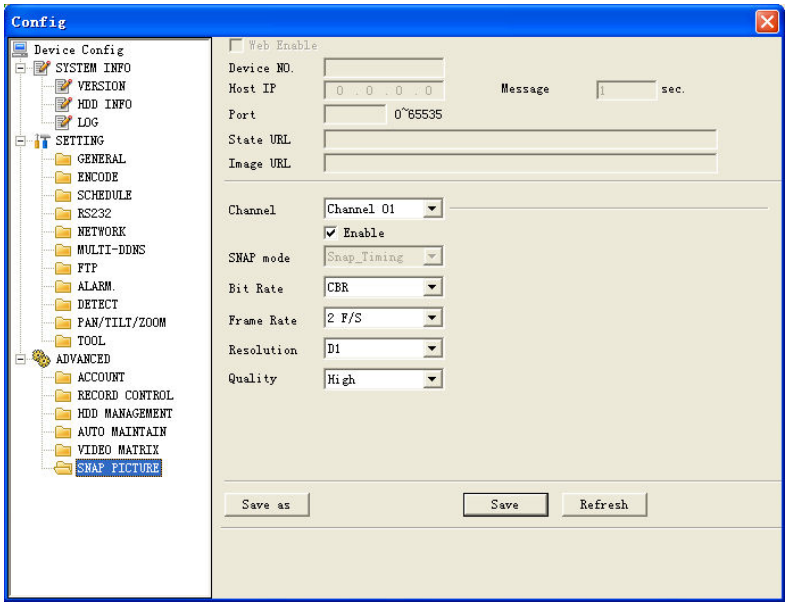


Figure 7-53

7.4 Playback

Here you can specify a video type, channel number and a time to search for desired files you wish to playback.

Click playback, the interface is shown as in Figure 7-54

Once you've chosen a time, date, and channel, click on 'search'. The results will appear as in Figure 7-54.

Use page up/down key to view the search results.

Double click the file name to start the playback.

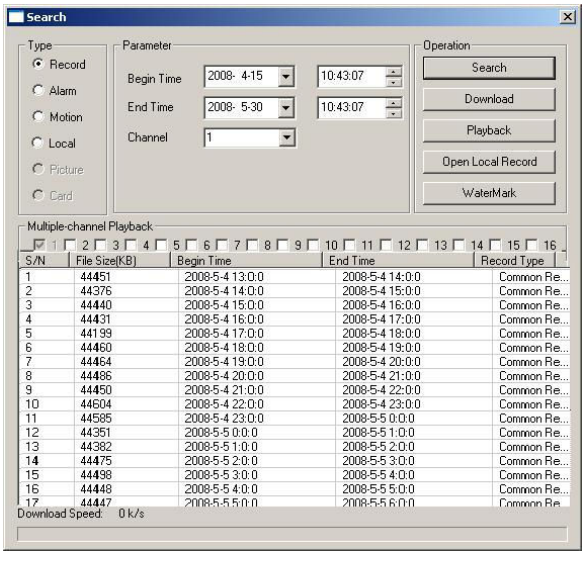


Figure 7-54

In the search result interface, you can select one or more files to download to your local PC.
The playback bar is shown as below. See Figure 7-55.
1: Play
2: Pause
3: Stop
4: Slow play
5: Fast play

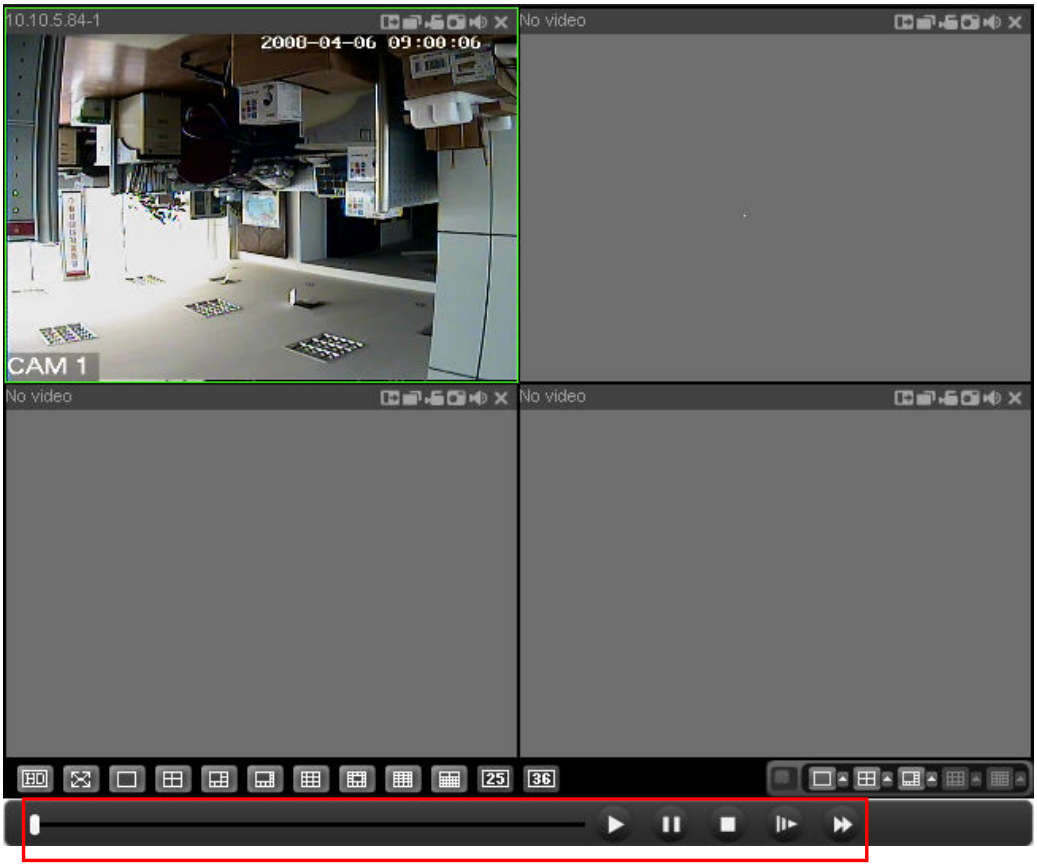


Figure 7-55

7.4.1 Download

Select one or more files you want to download and then click download. The System will pop up a dialogue box asking you to specify a destination directory. See Figure 7-56.

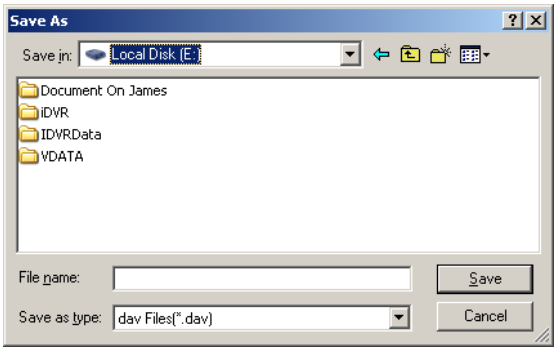


Figure 7-56

Now, you can input a file name and click save to backup the file to your local pc. During the download, there is a progress bar for reference, and you will also see the download button becomes a stop button. See Figure 7-57.

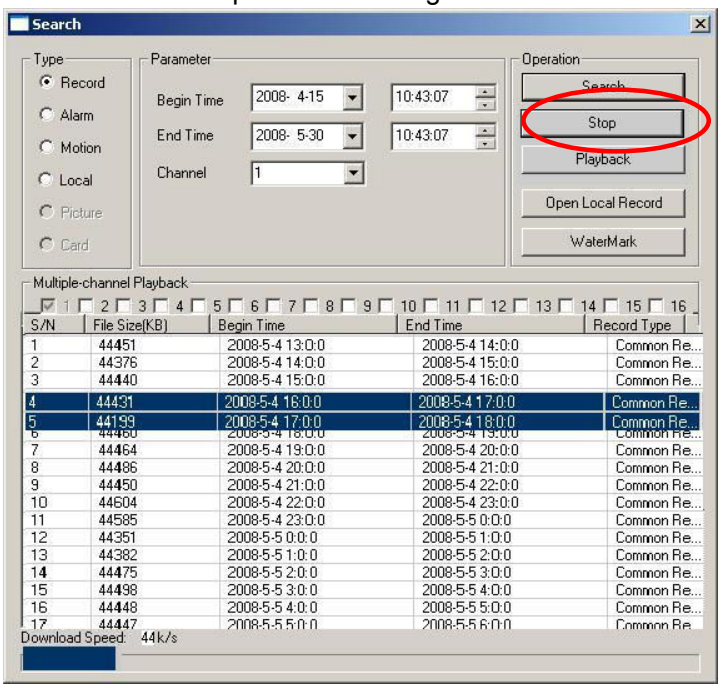


Figure 7-57

7.4.2 Watermark

Click watermark, to see an interface is shown as in Figure 7-58.

Here you can select local recorded file and then click verify, to check watermark information. You can see corresponding information in the watermark juggle column.

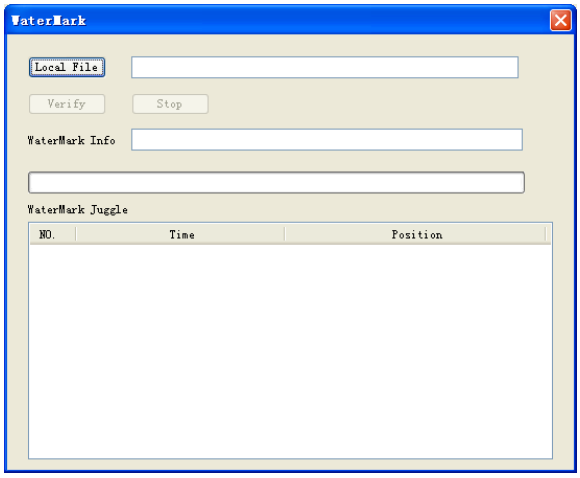


Figure 7-58

7.5 Event

Here you can set alarm type and alarm prompt audio file. See Figure 7-59.

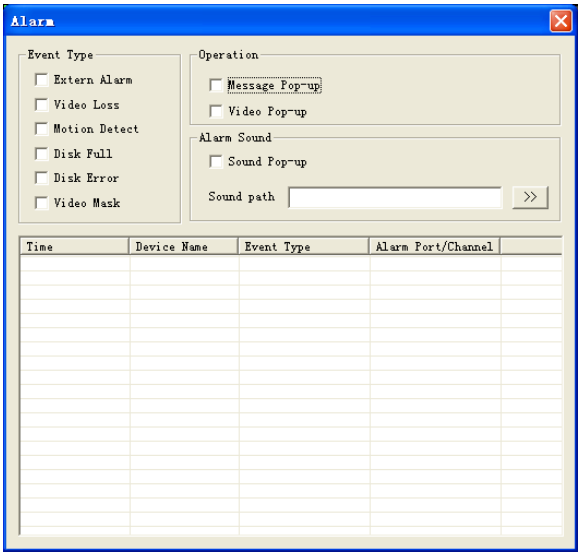


Figure 7-59

7.6 Info

Click info to view current web client information. See Figure 7-60.

Figure 7-60

7.7 Log out

Click log out and the system will go back to the log in interface. See Figure 7-61.

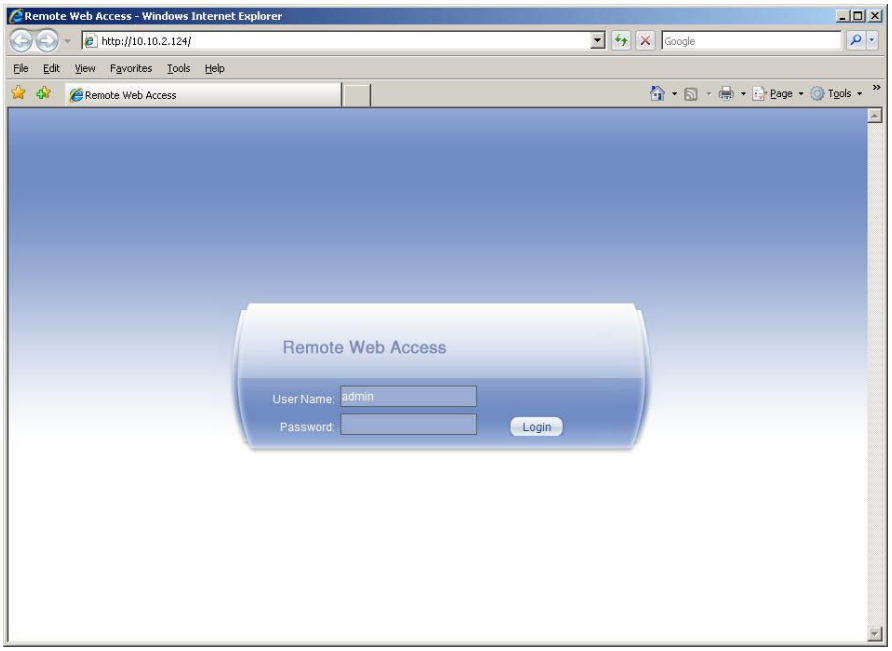


Figure 7-61

7.8 Un-install Web Control

You can use web un-install tool “uninstall web.bat” to un-install web control.

Note, before you un-install, close all web pages first. Otherwise the un-installation may result in error.

8 Enterprise Professional Surveillance System

In this chapter, we introduce how to add devices and how to enable monitoring function using the client software. For detailed operation, refer to enterprise professional surveillance system user's manual.

8.1 Log in

Double click the enterprise professional surveillance platform icon ( )from your desktop. If it is your first time using the software, you will be prompted to choose a language. See Figure 8-1.

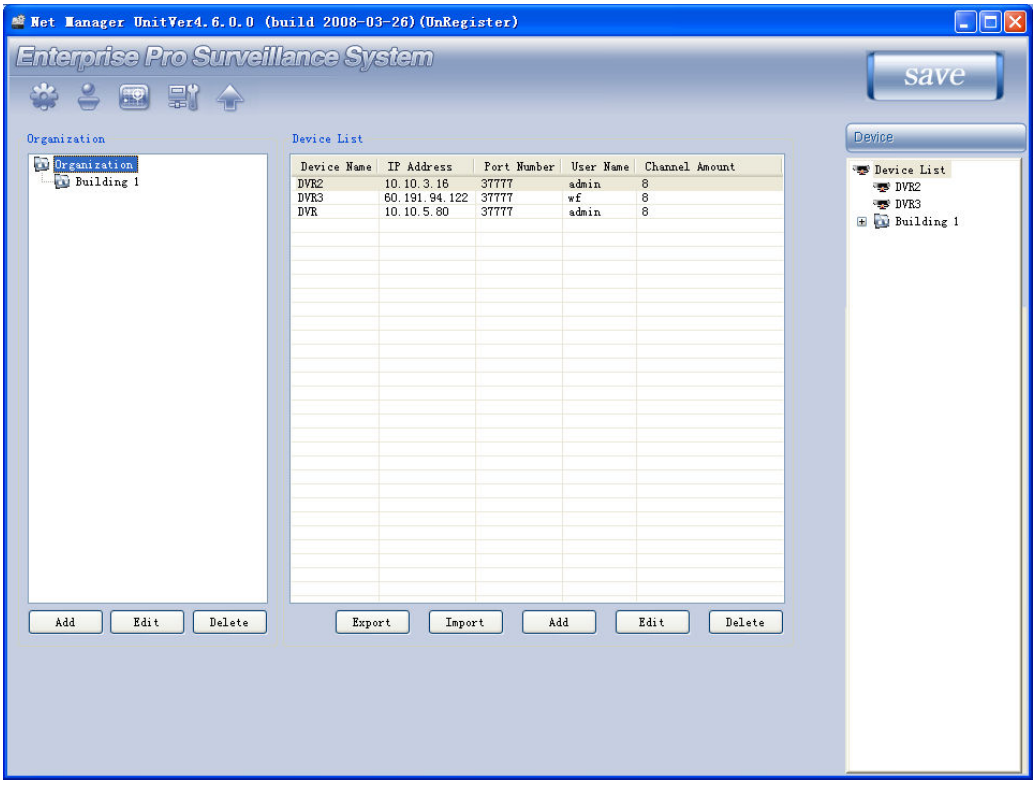
Figure 8-1

After selecting a language, click ok to proceed to the login screen. Here you can input a user name and password to log in to your selected server. The log in interface is shown as in Figure 8-2.
If it is your first time to use the system, click on 'add' to add your device. The defaulted central control server is named 'Local'.
System default username and password are both admin.
Note: For security reasons, we recommend you modify the password after your first login.

Figure 8-2

8.2 Add New Device

After successfully logging in, we need to create a new connection for your DVR. Click Device Management from the icon group towards the right side, above the device list. Add a new organization first by clicking the add button on the left hand side. Now, click add under the device list column to add in the host information of the DVR you wish to connect to. Once finished, select 'save' in the upper right part of your screen. For more information about this operation and more about this software, please refer to its own manual.


Net Manager UnitVer4.6.0.0 (build 2008-03-26)(UnRegister)
Enterprise Pro Surveillance System
save
Organization
Organization
Building 1
Add
Edit
Delete
Device List
Device Name
IP Address
Port Number
User Name
Channel Amount
DVR2
10.10.3.16
37777
admin
8
DVR3
60.191.94.122
37777
wf
8
DVR
10.10.5.80
37777
admin
8
Export
Import
Add
Edit
Delete
Device
Device List
DVR2
DVR3
Building 1

8.3 Viewing Live Cameras

After successfully creating a new connection for the DVR, select the device and then click connect/disconnect button（ ）.

Select the channel you wan to view, click connect/disconnect, （ ） again.

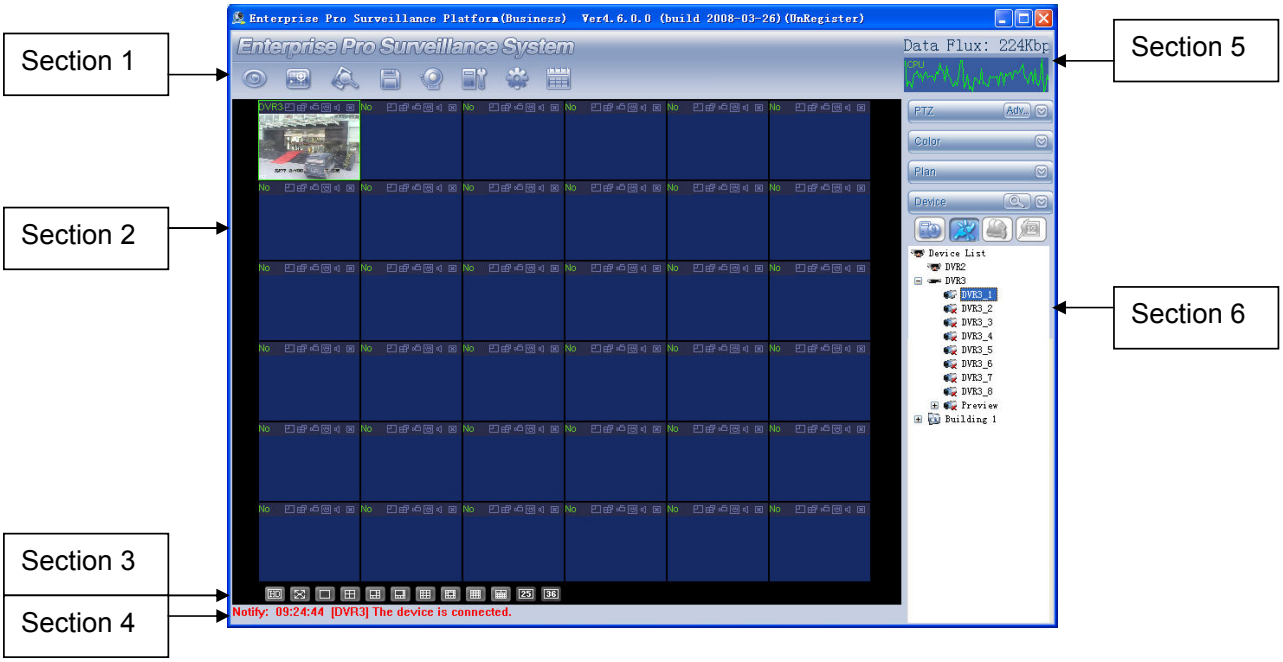


Figure 8-3

There are total six sections:

- Section 1: There are eight function keys: monitor, E-map, record, save, alarm, configuration, log and system.
- Section 2: This is where you can view channel video.
- Section 3: This is where you can select display mode. System supports various display modes. HD item is for you to select priority between network latency and video fluency.
- Section 4: This is where you can view current help information.
- Section 5: Here is the display for data flux and CPU status.
- Section 6: There are four function buttons: PTZ, color, device, and plan. For best performance, we recommend resolution 1024*768.

Select a device name and then click connect/disconnect, you will connect to the current selected DVR. You will notice the red-cross below the name disappeared.
Select a window on you left side (Section-2) and then double click the channel name on you right hand (Section-6), you will notice the corresponding video in the highlighted window.
Please refer to Figure 8-4 for connection/disconnection information.

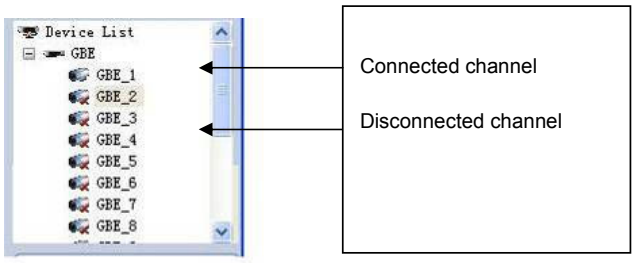


Figure 8-4

.

Figure 8-5

9 RS232 Operation

9.1 Network Connection

Before serial port operation, connect the matrix device with the DVR through the RS232 port. Now, set the DVR's serial port protocol to the corresponding matrix device protocol.

Note: Contact your local retailer to confirm whether the DVR supports matrix protocol or not.

9.2 Keyboard

The control keyboard is very convenient for multi-DVR control, menu options and PTZ control. Select **keyboard control** from the system **setting→RS232→function, and then** set the corresponding baud rate. Connect the DVR RS232 port to the converters DSub 25-pin RS232 port, and finally specify proper control addresses for all connected DVRs (Navigate from Main Menu→Settings→General). Now you are able to input the DVR control address and use the keyboard keys to control menu items, or any PTZ. See Figure 9-1.

Note：The keyboard works only when ACT light is on.

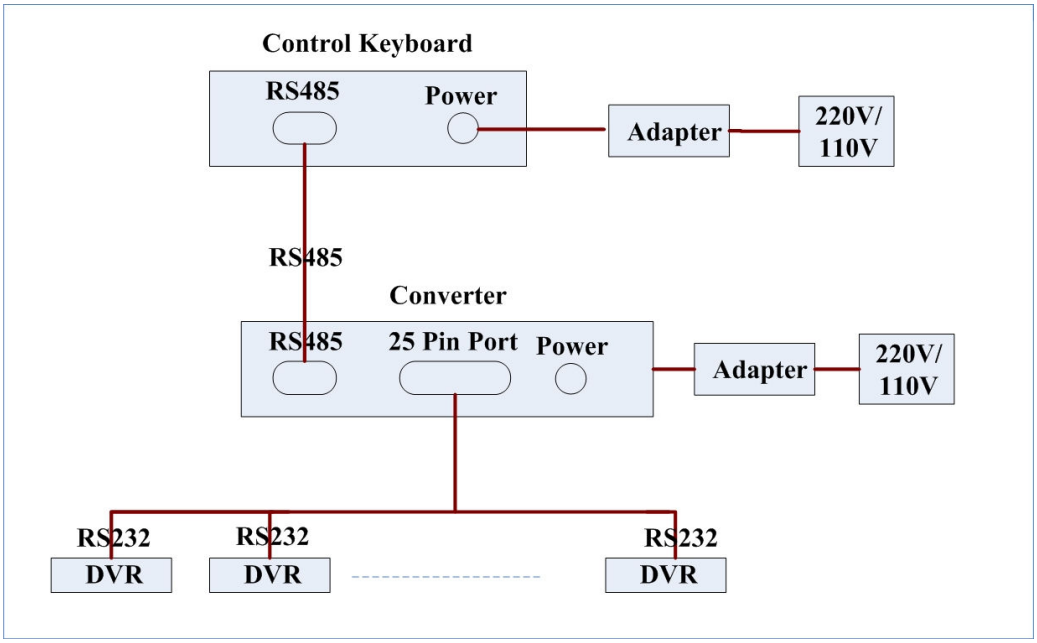


Figure 9-1

10 FAQ

1. DVR does not boot up properly.

These are the possibilities:

- Input power is incorrect.
- The power cord is incorrectly seated.
- Power switch is damaged.
- HDD malfunction or something wrong with HDD ribbon.
- Seagate DB35.1，DB35.2，SV35 or Maxtor 17-g has compatibility problem. Upgrade to the latest version to solve this problem.
- Front panel circuit board is damaged.
- Main board is damaged.

2. DVR often automatically shuts down or stops running.

These are the possibilities:

- Input voltage is not stable or it is too low.
- HDD malfunction or something wrong with the ribbon cable.
- The working environment is too harsh. It's either operating in too cold or too hot of an area.
- Accumulation of too much dust in the unit.
- Hardware malfunction.

3. The system can not detect hard disk.

These are the possibilities:

- HDD is broken. Physically or logically damaged.
- HDD ribbon is damaged.
- HDD cable connection or power connection is loose.

4. There is no video seen whether it is one-channel, multiple-channel or all-channel outputs.

These are the possibilities:

- Check all video connections.
- There is either no video input signal or it is too weak.
- Check if privacy mask setup is turned on for certain channels.
- Check for indicator icons on screen. A lock icon represents no right to view, and a question mark represents no video signal.
- DVR hardware malfunction.

5. Video output is distorted.

These are the possibilities:

- Use only one primary output at a time. Either the VGA output or the first composite output.
- The DVR and monitor resistance are not compatible.
- Video transmission is too long and may be degrading the signal.
- The monitor's color or brightness is not correctly setup.

6. Can not search local records.

These are the possibilities:

- HDD ribbon is loose or damaged.
- HDD is physically or logically damaged.
- The recorded file has been overwritten.
- Record function has been disabled.

7. Video is distorted when searching local records.

These are the possibilities:

- Video quality setup is too low.
- There is a mosaic in full screen. Restart the DVR to solve this problem.
- HDD data ribbon malfunction.
- HDD malfunction.
- DVR hardware malfunction.

8. There is no audio when monitoring. (Live/Playback)

These are the possibilities:

- Audio inputs could be loose.
- Audio device could have incorrect power.
- Audio cable is damaged.
- DVR hardware malfunctions.

9. There is audio when monitoring but there is no audio with system playback.

These are the possibilities:

- Setup is incorrect. Enable audio recording from the Encode menu.

10. Time display is not correct.

These are the possibilities:

- Setup is incorrect. Adjust the current time from the General menu.
- CMOS battery failing or depleted. Replace with a CR-2032 style battery.

11. DVR can not control PTZ.

These are the possibilities:

- PTZ control setup, connection or installation is incorrect.
- PTZ dome setup is incorrect.
- PTZ ID and DVR control address don't match. (Change in Settings→Pan/Tilt/Zoom)
- When there are several decoders, add 120 Ohm between the PTZ decoder A/B cables furthest end to delete the feedback or impedance. Otherwise the PTZ control will be unstable.
- The distance is too far for data communication.

12. Motion detection function does not work.

These are the possibilities:

- Period setup is incorrect.

- Motion detection zone masking setup is incorrect.
- Sensitivity is too low.

13. Can not log in to client-end or web.

These are the possibilities:

- Windows 2000 or above are the only supported operating systems.
- ActiveX control has been disabled.
- DX8.1 or higher is required. Upgrade display card driver to the newest available.
- Network connection error.
- Physical network setup error.
- Password or user name is invalid.
- Client-end is incompatible with the DVR unit.

14. There is only mosaic. No video when preview or playback file remotely.

These are the possibilities:

- Network latency is not good.
- Client-end resources are limited.
- There is privacy mask or channel protection setup.
- Current user has no right to monitor.
- DVR local video output quality is poor.

15. Network connection is not stable.

These are the possibilities:

- The network connection itself is unstable.
- IP address conflict.
- MAC address conflict.
- PC or DVR network card is bad.

16. Burn error /USB backup error.

These are the possibilities:

- System is using too much CPU resources. Stop recording first and then begin backup.
- Data amount exceeds backup device capacity. You will receive “Not enough space!”.
- Backup device is not compatible.
- Backup device is damaged.

17. Keyboard can not control DVR.

These are the possibilities:

- DVR serial port connection is incorrect.
- Address is not correctly setup with either the DVR or the keyboard.
- When there are several converters, the power supply may not be sufficient.
- Transmission distance is too far.

18. Alarm signal can not be disarmed.

These are the possibilities:

- Alarm setup is incorrect.
- Alarm output has been triggered manually.
- Input device error or connection is not correct. Check all terminated connections.

19. Alarm function can not be armed.

These are the possibilities:

- Alarm setup is incorrect.
- Alarm cable connection is not properly seated in the respective terminals.
- Alarm input signal is incorrect.
- There are two loops connected to one alarm device. Correct the loop.

20. The Remote control does not work.

These are the possibilities:

- Remote control address is not correct. Press 'RC' on the remote, and type the default address (8)
- Distance is too far or control angle is too narrow.
- Remote control battery power is low.
- Either the remote control is damaged or the DVR front panel is damaged.

21. Record storage period is not enough.

These are the possibilities:

- Camera quality is too low. Lens is dirty. Camera is installed against the light. Camera aperture setup is not correct.
- HDD capacity is not enough. Add additional hard drive space.
- HDD is damaged.

22. Can not playback the downloaded file.

These are the possibilities:

- There is no media player. Refer to our support page to download the newest version of media player.
- Make sure you have the newest graphical driver issued to your video card.
- There is no DivX503Bundle.exe control (CODEC) when you play the file converted to an AVI file via your defaulted media player.
- No DivX503Bundle.exe or ffdshow-2004 1012 .exe in Windows XP OS.

23. Lost local menu operation password or network password

Contact your local service engineer or our sales person for help. We can guide you to solve this problem. Only authorized vendors will be able to receive help on this topic.

Slight difference may be found in user interface. All the designs and software here are subject to change without prior written notice.

Appendix A HDD Capacity Calculation

Calculate total capacity needed by each DVR according to video recording (video recording type and video file storage time).

Step 1: According to Formula (1) to calculate storage capacity q_i that is the capacity of each channel needed for each hour, unit Mbyte.

$$q_i = d_i \div 8 \times 3600 \div 1024 \quad (1)$$

In the formula: d_i means the bit rate, unit Kbit/s

Step 2: After video time requirement is confirmed, according to Formula (2) to calculate the storage capacity m_i, which is storage of each channel needed unit Mbyte.

$$m_i = q_i \times h_i \times D_i \quad (2)$$

In the formula:

h_i means the recording time for each day (hour)

D_i means number of days for which the video shall be kept

Step 3: According to Formula (3) to calculate total capacity (accumulation) q_T that is needed for all channels in the DVR during **scheduled video recording**.

$$q_T = \sum_{i=1}^{c} m_i \quad (3)$$

In the formula: c means total number of channels in one DVR

Step 4: According to Formula (4) to calculate total capacity (accumulation) q_T that is needed for all channels in DVR during **alarm video recording (including motion detection)**.

$$q_T = \sum_{i=1}^{c} m_i \times a\% \quad (4)$$

In the formula：$a\%$ means alarm occurrence rate

Appendix B Compatible USB Drive List

NOTE: upgrade the DVR firmware to latest version to ensure the accuracy of the table below. If you use the USB drive, confirm the format FAT or FAT32.

Manufacturer	Model	Capacity
Sandisk	Cruzer Micro	512M
Sandisk	Cruzer Micro	1G
Sandisk	Cruzer Micro	2G
Sandisk	Cruzer Freedom	256M
Sandisk	Cruzer Freedom	512M
Sandisk	Cruzer Freedom	1G
Sandisk	Cruzer Freedom	2G
Kingston	DataTraveler II	1G
Kingston	DataTraveler II	2G
Kingston	DataTraveler	1G
Kingston	DataTraveler	2G
Maxell	USB Flash Stick	128M
Maxell	USB Flash Stick	256M
Maxell	USB Flash Stick	512M
Maxell	USB Flash Stick	1G
Maxell	USB Flash Stick	2G
Kingax	Super Stick	128M
Kingax	Super Stick	256M
Kingax	Super Stick	512M
Kingax	Super Stick	1G
Kingax	Super Stick	2G
Netac	U210	128M
Netac	U210	256M
Netac	U210	512M
Netac	U210	1G
Netac	U210	2G
Teclast	Ti Cool	128M
Teclast	Ti Cool	256M
Teclast	Ti Cool	512M
Teclast	Ti Cool	1G
Teclast	Ti Cool	2G

Appendix C Compatible CD/DVD Burner List

NOTE: upgrade the DVR firmware to latest version to ensure the accuracy of the table below. And you can use the USB cable with the model recommended to set USB burner.

Manufacturer	Model	Interface	Type
Sony	DRU-835A	IDE	DVD-RW
Sony	DW-Q120A	IDE	DVD-RW
Sony	DW-G120A	IDE	DVD-RW
Sony	CRX-230AE	IDE	CD-RW
Sony	CRX-320A	IDE	CD-RW
Sony	CRX-225E	IDE	CD-RW
BenQ	DW2000	IDE	DVD-RW
BenQ	DW1670	IDE	DVD-RW
BenQ	DW1650	IDE	DVD-RW
BenQ	DW1640	IDE	DVD-RW
BenQ	5232W	IDE	CD-RW
Samsung	TS-H652M	IDE	DVD-RW
LG	GH20NS10	SATA	DVD-RW
PIONEER	DVR-212D	SATA	DVD-RW
Sony	AW-G170S	SATA	DVD-RW
Samsung	TS-H653A	SATA	DVD-RW
Panasonic	SW-9588-C	SATA	DVD-RW
Sony	DRX-S50U	USB	DVD-RW
BenQ	5232WI	USB	DVD-RW

Appendix D Compatible SATA HDD List

NOTE: upgrade the DVR firmware to latest version to ensure the accuracy of the table below. And SATA HDD should be used for the DVR with SATA port.

Manufacturer	Series	Model	Capacity	Type
Seagate	Barracuda.10	ST3750640AS	750G	SATA
Seagate	Barracuda.10	ST3500630AS	500G	SATA
Seagate	Barracuda.10	ST3400620AS	400G	SATA
Seagate	Barracuda.10	ST3320620AS	320G	SATA
Seagate	Barracuda.10	ST3250620AS	250G	SATA
Seagate	Barracuda.10	ST3250820AS	250G	SATA
Seagate	Barracuda.10	ST3160815AS	160G	SATA
Seagate	Barracuda.10	ST380815AS	80G	SATA
Seagate	Barracuda.9	ST3160811AS$_2$	160G	SATA
Seagate	Barracuda.9	ST3120811AS$_2$	120G	SATA
Seagate	Barracuda.9	ST380811AS$_2$	80	SATA
Seagate	Barracuda.9	ST380211AS$_2$	80G	SATA
Seagate	Barracuda.11	ST3750330AS	750G	SATA
Seagate	Barracuda.11	ST3500320AS	500G	SATA
Hitachi	Deskstar	SV3.5 Series	160/250/500/ 750/1TB	SATA
Maxtor	DiamondMax 20	STM3320820AS	320G	SATA
Maxtor	DiamondMax 20	STM3250820AS	250G	SATA
Maxtor	DiamondMax 21	STM3160211AS	160G	SATA
Maxtor	DiamondMax 21	STM380211AS	80G	SATA
Maxtor	DiamondMax 21	STM340211AS	40G	SATA
Western Digital	Caviar SE	WD3200JD	320G	SATA
Western Digital	Caviar SE	WD3000JD	300G	SATA
Western Digital	Caviar SE	WD2500JS	250G	SATA
Western Digital	Caviar SE	WD2000JD	200G	SATA
Western Digital	Caviar SE	WD1600JD	160G	SATA
Western Digital	Caviar SE	WD1600JS	160G	SATA
Western Digital	Caviar SE	WD1200JS	120G	SATA
Western Digital	Caviar SE	WD800JD	80G	SATA
Western Digital	Caviar	WD1600AABS$_2$	160G	SATA
Western Digital	Caviar	WD800BD	80G	SATA
Western Digital	Caviar SE16	WD7500KS$_2$	750G	SATA
Western Digital	Caviar SE16	WD5000KS$_2$	500G	SATA
Western Digital	Caviar SE16	WD4000KD$_2$	400G	SATA
Western Digital	Caviar SE16	WD3200KS$_2$	320G	SATA
Western Digital	Caviar SE16	WD2500KS$_2$	250G	SATA